

BASIC ECONOMICS *for* CONSERVATIVE DEMOCRATS

LaRouche

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Lyndon H. LaRouche, Jr.



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by Lyndon Hermyle LaRouche, Jr.

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PREFACE

Toward the end of a heavy schedule of meetings recently in France and West Germany, I had the pleasure of meeting once again with an acquaintance of several years' standing, an official of a prominent bank. At one point in our discussion, he commented, with words to the effect: No one thinks about the economics of capital formation these days.

The statement is broadly correct. My host's special vantage-point, as my own must be until I enter the White House, is that of a somewhat influential figure working to contribute to the policy-making processes of governments and businesses the kinds of insights and conceptions effective policy-making requires. Here and there we succeed, but more often we witness policy being shaped by conceptions which are variously potentially disastrous or merely dangerously inadequate. The "gut" of sound economic policy is proper concern for the economics of capital formation; today, we see very little recognition of even the mere existence of such an important matter in the

policy-making of governments, and certainly not among the "think tanks" that increasingly control governmental and other policy-making processes.

That discussion occurred at the beginning of this month. Amid shaking off transatlantic "jet lag," campaigning, and repelling an assault by the grippe, I have been working out a short book on the subject of capital formation in my thoughts. I decided to elaborate the points to be made in the form most suitable to business people, farmers, and labor officials of the sort I have been meeting in the state of New Hampshire.

There were several converging reasons for that particular choice, reasons I summarize in this preface. As for my readers in Western Europe and among the so-called developing nations, putting the material into the form suited to my New Hampshire readers would be no disadvantage. Key figures in Western European governmental, financial, and industrial circles are watching the New Hampshire primary closely, with special interest in developments around my own campaign. Henry Kissinger travels in key European and other circles, warning governments and bankers not to show any interest in my campaign: a warning which merely increases the sense of importance attached to that candidacy.

Now, as I turn to outline the reasons for the indicated choice, I begin with what may appear to be a digression, but which you shall soon see takes us directly to the key facts to be presented.

What Is a "Conservative Democrat"?

The key to the content of this book is that it is a conservative Democrat who happens to be a leading economist speaking to other conservative Democrats who are sensible, mature persons, but know very little about economics. Therein lies the appropriateness of the title given to this book.

Therefore, we ought to begin now by defining what the term "conservative Democrat" ought to signify.

Generally, it means a nonliberal Democrat, a Democrat who rejects the kind of British "philosophical radicalism" typified by such figures as Senator Edward Kennedy or Governor Edmund "Jerry" Brown, Jr. It means a Democrat who rejects Kennedy and Brown's efforts to legalize the spread of the drug epidemic by such foot-in-the-door tricks as "decriminalization of marijuana." It means a Democrat who rightly views homosexuality as a sickness, and who abhors politicians, such as Governor Brown, who support homosexuality as a political cause. It means Democrats who dislike the look, the aromas, and the unwholesome babbling associated with the violence-prone invaders of the Seabrook nuclear construction site.

In general, we define liberals, whether Democrats or Republicans, as those who bend to the proposal for "marijuana decriminalization" and who make opportunist deals with the likes of Barry Commoner, Ralph Nader, or Jane Fonda. We

believe that there is a knowable right morality, and a unique knowable scientific truth to be discovered in all matters of individual and social practice. We may squabble among ourselves in our search for moral and scientific truths, but we debate one another under the shared persuasion that a truth exists to be discovered yet more perfectly.

Therefore, let us put to one side the liberal varieties of both Democrats and Republicans. Let us focus our attention on the differences between nonliberal, mainstream Republicans and nonliberal, mainstream Democrats. As we shall discover, this summary investigation leads us directly to a definition of a conservative Democrat's economic outlook.

New Hampshire is one of the most interesting states from this standpoint. The state is predominantly Republican in overall bias. On many points there are minimal differences in outlook between the state's nonliberal portion of Republicans, on the one side, and nonliberal Democrats and independents, on the other side. There are, however, some significant differences.

The crucial difference between the state's conservative Democrats and nonliberal Republicans is that the Democratic Party is politically allied to the state's labor organizations. It is on this point that the conservative Democrat echoes the outlook of the Whig Party of Henry C. Carey and Abra-

ham Lincoln, whereas on this point the state's Republican Party as a whole does not. I refer most emphatically to Henry C. Carey's argument in favor of "The Harmony of Interest," the case for a political alliance of business, farmers, and labor—with special emphasis on business and labor.

As I spell the point out in the main text of this book, a sound national economic policy in the tradition of Alexander Hamilton enables us to simultaneously increase profits and wages. This can be accomplished in only one way. It is accomplished by transforming scientific and technological advances into what Hamilton termed "artificial labor," machines which use sources of energy above and beyond the energy of the human musculature. In the overall life of our nation—or any nation, for that matter—neither business nor labor can prosper without a policy of promoting technological progress through the means of improved investment in productive capital.

True, management and labor will not cease squabbling over wages, working conditions, and such. However, it will not take the form of a "class struggle" between management and labor, however festive and prolonged the local labor-management conflict may be in particular instances. Once business and labor recognize that they both have the same overall, fundamental national economic-policy interest in common, that understanding establishes a mass electoral basis of support

for the kinds of policies which business, farmers, and labor as a whole rightly demand.

LaRouche as a Conservative Democrat

Let us shift attention very briefly from inside the state of New Hampshire to my nationwide campaign. I shall identify the kinds of political alliances I have already made or am in the process of negotiating as the leading edge of the forces I am working to rally around my candidacy. Let us consider these alliances in the light of the observations I have just made concerning "The Harmony of Interest."

I am making alliances with business, professional, and farmer groups. I am making alliances with what might be described as the more conservative sort of labor officials. I am committed to close cooperation with strata of black groups typified by those who moved from the Republican to the Democratic Party after 1929.

The theme characterizing these alliances as a whole is my commitment to getting what used to be called "The American Dream" back on the tracks and running again, with opportunities for those groups which did not have an opportunity to board that train, as well as for those who are being or have been pushed off.

My policy is "conservative" in the sense that I am committed to what the old Whig Party termed the "American System" of political economy, and

am committed to the philosophical outlook, properly named "Neoplatonic," which informed the judgment of the majority of our nation's founding fathers. I propose to realize this policy and outlook by means of developing "The Harmony of Interest" among business, professional, farmer, and laboring strata through interplay among representatives of the social forces so brought together. It is that outlook and policy which defines me in the world of 1980's election campaign as a "conservative Democrat."

How Policy is Made

Any qualified economist, given adequate computer facilities, given computer programs suited to my own "Riemannian" methods, and a proper assortment of adequate data, might produce an ostensibly competent set of economic-policy proposals. If economists are abundant, qualified economists are as rare as my European banker-friend implied by his complaint. The lack of qualified economists makes the whole proposition hypothetical, but even so the proposition serves us in making an important point.

The image of an economist's cranking-out an economic-policy proposal smells of academic self-righteousness. The policy may be right or wrong in the abstract, but it remains merely an impotent posturing until appropriate action is taken to make those proposals an integral part of the kinds of

social processes through which policies are or might be adopted by influential political forces of the electorate.

The point I have just identified is at least as old as Plato. It is a conception which governed the majority of our founding fathers in developing this nation as a federal constitutional republic. It is a principle which is totally ignored by those misguided citizens who propose to tack amendments interminably to our Constitution.

The central point of Plato's study of the difficulties in the way of creating an "ideal state" was his preoccupation with the fact that the human population in general is divided into three stratifications of moral development. On the lowest level, man is morally like a beast—or, like an existentialist. He is a hedonistic irrationalist. On the highest, the third level of moral development, man becomes a conscious servant of Reason; the individual dedicates his or her life to advancing the human condition generally. In between, on the second level, men and women are self-defined as moral and rational, but are also seeking "earthly paradise" for themselves and their immediate families. One of the most famous elaborations of these three levels is the *Commedia* of Dante Alighieri. One rightly recognizes a kinship between the organization of Dante's *Commedia* and the principles of fourteenth- and fifteenth-century, Augustinian freemasonry, for example, prior to the synthesis of the Scottish Rite.

The persons on the first, lowest level of moral development are in fact unfit to be citizens of a republic. Their intellectual and moral development is such that they are unfit to influence the policy-making processes of a nation. The proper right of citizenship belongs only to persons on either of the two higher levels of moral development. However, we tolerate the extension of the franchise to adults on the lowest level on the assumption that this section of the electorate can be contained securely as a minority of the electorate.

The proper constitution of a republic is concerned with ordering the policy-making interplay among the citizens in such a way that out of those conflicts and other forms of interplay a "Harmony of Interest" may emerge as the adopted policy of the republic. For example, our founding fathers not only devised the separation of powers among federal, executive, congress, and court, but wisely divided the legislative branch into two houses, and so arranged the terms of office of the President and senators in such a way as to tend to frustrate episodic errors seizing the opinion of a majority of the electorate at any one time.

A proper constitution is not a string of legislated laws. It is an ordering of the policy-making processes of a republic. It creates obstacles to the imposition of the will of that section of the population which is on the lowest, hedonistic-irrational level of moral development, and provides for an orderly social process among the citizenry as the

process by which representatives are selected and policies formulated.

The same constitutional-like principle is the point I am emphasizing as a “conservative Democrat’s” approach to the shaping of national economic policy. A proper form of interplay among business, farmers, and labor must be the central feature of the process of making economic policy for the nation.

Just as the republican party of England, the Commonwealth Party of Cromwell and Milton, made the fostering of compulsory public education the foundation for the qualifications of citizenry as well as of potential productive powers of labor, so the public mind must be competently informed of the basic principles of economics if the social interplay among business, farmers, labor, and others is actually to bring our nation to correct economic policies.

Conservative Democrats of new Hampshire—and other states—must therefore arm themselves with such knowledge, and very quickly. Double-digit inflation, a dollar which has plummeted more than 50 percent in value since 1971, and by more than 25 percent under President Carter, and now a verging upon what all would describe as a full-fledged depression . . . now is the time to rid oneself of old illusions about economic principles and master the basics, before it is too late to stop the collapse now threatening us.

In meeting part of that challenge in this book, I am also addressing myself to the problem against which my banker-acquaintance complained: the economics of capital formation.

**BASIC
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1

**LEIBNIZ
DEFINES
SCIENTIFIC
ECONOMICS**

The isolation of “capital formation” as the determining source of the maintenance and increase of the wealth of nations was first accomplished by the scientist Gottfried Wilhelm Leibniz (1646-1716) during the latter part of the seventeenth century. Leibniz pointed out that the central problem of economic policy was defining those methods which enabled nations to increase simultaneously the rate of profit and average real wages. The means which enables societies to do that was described a century later by U.S. Treasury Secretary Alexander Hamilton as “artificial labor.”¹

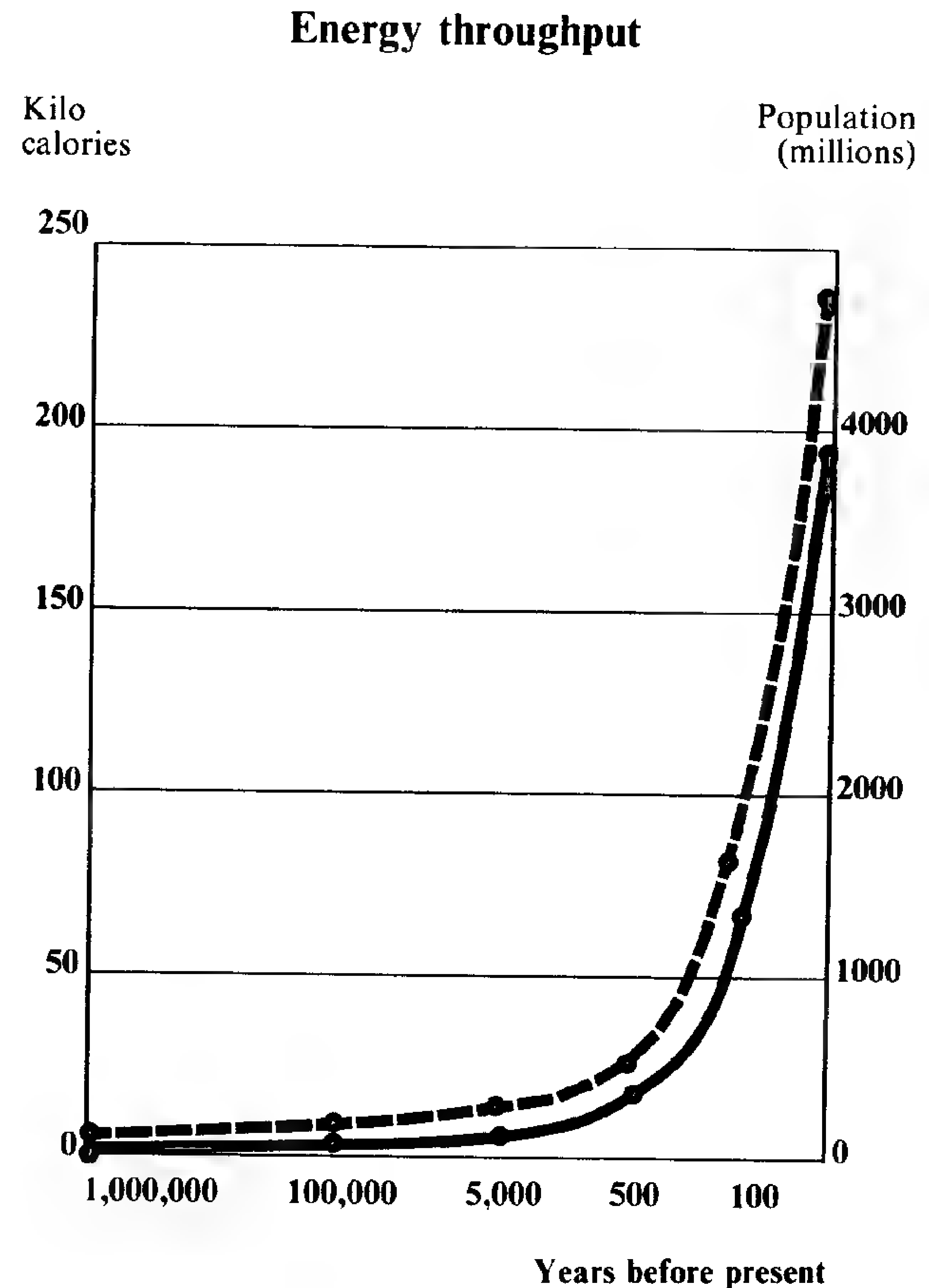
1. Alexander Hamilton, *Report on the Subject of Manufactures*, 1791, in Nancy B. Spannaus and Christopher White, *The Political Economy of the American Revolution*, (New York: Campaigner Publications, University Editions, 1977), pp. 375-442.

Today, instead of the term “artificial labor,” we commonly use the term “capital formation.”

When we speak of “capital formation” in this connection, we are not speaking directly of the money-capital of investments, but we are speaking directly of the kinds of “capital goods,” including plant, machinery, equipment, that lift human productive labor above the poverty of “muscle labor.”

For example, consider the case of urban productive labor in a developing nation such as India. In India today, there are upward of 55 million persons who fall into the category of an “urban labor-force.” Generally speaking, this urban labor-force of India has a European-American level of education and culture. (Among nations, India ranks third—after the Soviet Union and the United States—in the number of scientifically trained professionals.) Some of this urban labor-force of India is employed in modern steel, chemical, and other industries. India’s high-technology heavy-construction firms rank among the best in the world, for example. Where members of this labor-force are employed using modern plant, equipment, machinery and so forth, their per capita output as operatives is in the order of tens of thousands of U.S. dollars-equivalent—as is the case for skilled and semiskilled labor so employed in industrialized nations generally. However, where labor-intensive employment is substituted for capital-intensive employment, the output of

Figure 1



such labor could not be more than a few thousand U.S. dollars-equivalent on the world market.

Leibniz and Hamilton's point, as illustrated by the glance we have just made at the urban labor-force of India, is more broadly illustrated by tracing the "economic history" of the human species over a much longer span. Using studies compiled by anthropologists and others, the author's associates a few years ago compiled and cross-checked the data we list here in *Figure 1*.

The point illustrated by *Figure 1* is summarily this. If we discount the cases in which particular societies, even entire civilizations, have collapsed through technological stagnation and related reasons, we have remaining a picture of the growth of the population of the human species, from the order of millions or so individuals during and following the so-called Pleistocene period, to about four billion persons today. This growth in population was not simply a result of human biological fertility, but was chiefly a result of the increase of mankind's population-potential through qualitative advancements in the technologies of producing the means of existence upon which a population of a given size depends. Moreover, the more advanced cultures, which also make possible growth of populations in what we term today "underdeveloped nations," maintain their populations at progressively higher levels of per capita consumption than societies which are less produc-

tive. The common denominator of such progress in the population-potential of the human species is the "energy-density" of modes of production per capita. *Figure 1* outlines the indicated "energy-densities" of various phases in the advancement of human culture, and correlates the existing rate of "energy-density" with the trend for increasing the rate of improvement of "energy-density."

For example, progress from "hunting and gathering" to herding of cattle represents an increase in the usable energy controlled and used by mankind per capita. Similarly, the development of even primitive agriculture increases the energy-density of a culture. Irrigation and fertilizers, land reclamation, and so forth, increase man's control of the energy flowing through the biosphere, and so increase the energy-density and population-potential of the culture.

There was a qualitative breakthrough in this direction during the course of the sixteenth century, as European civilization was confronted by the fact that society could no longer survive as civilized by mere use of wind-power, water-power and burning of wood, could no longer survive on the basis of what foolish people today term "renewable resources." In Tudor England, efforts were made to develop the use of coal, and initial efforts were made to develop a steam engine, an attempt brought to initial success by French scientists during the seventeenth century, and

brought into practice through Franco-American collaboration among scientists and engineers such as Fulton at the turn of the nineteenth century.

The modern age is distinguished by emphasis on development of "hotter," more "energy-dense" forms of usable energy, and the development of machinery and related equipment to enable productive labor to use that increased per capita energy in an increasingly "sophisticated," *organized* way. That is a fair, preliminary description of what Alexander Hamilton signified by the role of "artificial labor" in his 1791 policy-paper, *A Report on the Subject of Manufactures*. That is what we ought to mean when we use the term "productive capital" today. The process of continuing to improve the productive powers of labor by means of increasing the energy-density associated with such "productive capital" is what we ought to mean by "the economics of capital formation."

It is the object of this book to make the ABCs of "the economics of capital formation" comprehensible to such citizens as business officials, trade-union officials, farmers, and others. It is indispensable to accomplish that in New Hampshire at this time, so that voters will be equipped with the kind of background knowledge they require to cut through the incompetent gimmickry proposed by most of the Republican and Democratic presidential candidates for treating double-digit inflation,



Gottfried Wilhelm Leibniz

*Alexander Hamilton*

the collapse of the value of the U.S. dollar internationally, and growing threats of ever-deeper economic recession. In a republic, the ordinary citizen must be given the means to make effective decisions on economic and monetary policies. Without a background in “the economics of capital formation” the confused citizen is the helpless victim of various superstitious fads, such as those fads of “fiscal conservatism” and “deregulation” being promoted widely, variously by the cult-priests of the Heritage Foundation and the Brown and Kennedy campaigns.

This book concentrates on that indicated subject, “the economics of capital formation.” However, it also situates that subject in its proper context, a summary description of the roots and character of what was known during the period from the 1820s through Abraham Lincoln’s administrations as “The American System.” Putting those two inseparable sets of facts together helps the citizen to understand not only what sort of “economics of capital formation” will work to remedy today’s worsening crises; the citizen is shown that these principles are those which define the superiority of the “American System” over the opposing variety of political-economic philosophy, the “British System” of Adam Smith, David Ricardo, John Maynard Keynes, Milton Friedman, John Kenneth Galbraith, and the Wharton School varieties.

Nuclear Energy, For Example

Recently, the author authorized a scientific poll to be made of New Hampshire voters. The poll was designed under the direction of two outstanding scientists. The first of these two is Dr. Uwe Parpart, a graduate of the West German Naval Academy and former West German naval officer, who went on to complete advanced training, and is currently an internationally respected authority in the development of plasma physics. The second of these two is Dr. Steven Bardwell, an internationally known plasma physicist, the son of a leading statistician, and an eminently qualified statistician in his own right, as well as an accomplished computer specialist.

Their poll produced results which are roughly comparable to those recently reported by a leading polling group based at the University of New Hampshire. Since the Parpart-Bardwell poll examined New Hampshire citizens' views on nuclear-energy development in a broader context than is indicated by the University of New Hampshire poll, the Parpart-Bardwell poll combines with the UNH poll to provide us enhanced insight into the shape of political attitudes on nuclear-energy development among the citizens of the state. Notably, whereas the UNH poll considered the population of New Hampshire as a whole, the Parpart-Bardwell poll tested as statistically reliable within a range of about 1 percent in showing the opinions

among voters who are either Democrats or independents inclined to vote for Democratic candidates. This sample shows a lower support for nuclear-energy development than the UNH poll combining Democratic and Republican-oriented citizens of the state: 27 percent against nuclear-energy development, as opposed to 17 percent estimated as wholly opposed in the reports of the UNH poll. Even so, approximately 2 to 1, the polls show, Democrats and Democrat-inclined independents tend to favor nuclear-energy development as "necessary." This correlates with a finding that approximately 90 percent of New Hampshire Democrats and Democrat-inclined voters are either for maintaining or increasing measures against use of marijuana and other dangerous drugs, with the overwhelming majority for increasing measures. The hatred of marijuana and other drugs is the leading issue among New Hampshire voters, an issue which overlaps the somewhat smaller proportion of voters committed to nuclear-energy development as "necessary." This correlates with the commonplace view among those who despise the supporters of the Seabrook anti-nuclear demonstrations as being characteristically drug-users as well as antinuclear militants.

Examining the minority of those persons who are both antinuclear and supporters of Senator Kennedy's "marijuana decriminalization" package, we make the important further observation

that this hard core of antinuclear militants is ideologically an outgrowth of the rock-drug counterculture ferment of the LSD-25 epidemic of the late 1960s. This hard core is not properly regarded as "sincere" in its arguments against nuclear-energy development. Rather, they are, like Barry Commoner and Ralph Nader, fanatical supporters of the "small is beautiful" cult, a cult which is dedicated to significant deindustrialization of the United States. From the vantage-point of the historian, that hard core of modern "antinuclear militants" resurrects the bucolic cultism of the ancient Greek writer Hesiod and of the notorious Mediterranean cults of Dionysus and Bacchus. The hard-core ideologues of such countercultural cults combined with their ultraliberal sympathizers of the Institute for Policy Studies and Buckleyite varieties, the "libertarians" overlapping the ranks of the Democratic and Republican parties, as well as the Libertarian Party, the Citizen's Party, and some of the ultraconservative small parties as well as the "extreme left," add up to not more than 25 percent of the population nationwide, and are indicated to represent less than 20 percent of the citizenry of the relatively more conservative state of New Hampshire.

So, from the standpoint of combined polls and related qualitative analysis of such hard-core antinuclear strata, we are dealing politically with about 25 percent or less of the citizenry which is incurably

opposed to any expression of the traditional American commitment to technological progress. For all short-term practical political purposes, we should not waste arguments on attempting to convince such hardened anti-American ideologues as those, but must rather hope that most of them or their children can be induced to grow out of such lunatic world-outlooks over the years ahead.

The political problem of formulating nuclear-energy development policy is therefore defined by ignoring the indicated countercultural hard core of antinuclear strata, and restricting our efforts to that overwhelming majority of Democratic Party voters which is either already committed to the desirability, or at least the necessity of nuclear-energy development, but which has been in part frightened and confused by false and misleading propaganda against nuclear energy.

First, before focusing directly on those aspects of the nuclear-energy program that come directly under the heading of the economics of capital formation, let us dispense summarily with false reports by both the Nuclear Regulatory Commission and the so-called Kemeny Commission.

There are only two legitimate issues to concern us respecting the "proliferation" of nuclear-energy development. These issues occur only in the context of fission reactions, not in connection with controlled thermonuclear fusion. The two issues are "nuclear safety," including security against

sabotage and penetration of the operating cycle by potential saboteurs, and the matter of disposing of high-level radioactivity wastes.

On safety as such, we have excellent standards and procedures, as reviewed in the so-called Rasmussen Report—provided those standards and procedures are strictly, efficiently enforced, as they have not been conscientiously enforced since James R. Schlesinger's incumbency at the Department of Energy. We could adopt tougher standards, such as those adopted by West Germany; we can and should improve the margin of safety by two to three orders of magnitude over the coming decade's new fission installations—to the order of 1-in-a-trillion risk of any form of "accident." We must have tightened security against all "anti-nuclear sympathizers" anywhere within range of aiding potential sabotage until we produce a new generation of absolutely sabotage-proof nuclear installations, coming up during the 1980s if we work at it.

A standard nuclear fission plant of the type being widely constructed now produces about a ton of waste per plant per year. This waste takes the form of deteriorated fuel rods chiefly. By reprocessing this waste material, about 96 percent of the waste is salvaged as new fuel-rod material. Excepting some small amounts of valuable radioactive isotopes for medical and industrial usage, the remainder of the material should be used either

as breeder-reactor fuel, or neutralized. According to leading experts in Western Europe, such full reprocessing would increase the average cost of fuel by about 20 percent, and would eliminate all waste-disposal risks. Since fuel costs are relatively small, compared to the overall capital costs of a fission-energy plant, and since nuclear energy (without lunatic construction delays) is cheaper than conventional sources, the adoption of full-scale reprocessing is economically practical, as well as a proper environmental protection measure.

Apart from these two matters, all of the widely circulated allegations against nuclear-energy development are either ignorant superstition, or simply intentional spreading of lies by the friends of Barry Commoner, Ralph Nader, et al. within the major mass media and related channels.

A thorough study of the reports of both the Nuclear Regulatory Commission and the "Kemeny Commission" by nuclear scientists and nuclear-safety engineering specialists reveals that both bodies deliberately covered up the areas of investigation which any responsible body of investigators would have been obliged in good conscience to pursue.

All of the uncontested facts respecting the sequence of events preceding and accompanying the so-called Three Mile Island incident prove statistically a near-certainty of willful sabotage. The chances of the only admissible alternative, a com-

bination of independently willful misfeasances coinciding to produce such a result, are in the order of between 1 in 100,000 and 1 in a million chances. Those are the mathematical odds which argue that the Nuclear Regulatory Commission and "Kemeny Commission" report are willfully fraudulent in overall composition.

Notable is the fact that professionally trained representatives of the NRC, during the peak of the news media-orchestrated hysteria over the "Three Mile Island incident," issued their briefing in which they argued that a "ballooning hydrogen bubble" within the reactor-vessel threatened to lead to a "melt-down" of the variety the public mind associated with the film featuring Jane Fonda, "The China Syndrome." That false report by NRC experts can be construed only as willful falsehood. Indeed, the whole incident was played by both major news media and elements of the Carter administration as if the "incident" had been prearranged as public relations promotion for the just-released film "The China Syndrome."

Nor was that connection coincidental. The financial interests coordinating the production of the film are tightly interlinked politically with those elements of government and private interest which are variously involved in the effort to sabotage the United States' nuclear-energy development program and which are connected politically to elements within the NRC and Department of

Energy leading that side of the effort to sabotage the nation's nuclear-energy development program.

As for radioactive risk of an operating fission-energy plant, such a plant puts less radioactivity into the environment around the plant than a comparable coal-burning plant! A citizen would suffer more radioactive exposure by a camping trip in the mountains or a flight on a jet commercial aircraft. One is exposed to higher radioactivity by leaning against a brick building, or by sealing a wooden-frame house in an effort at winter "energy conservation." In the last case, the accumulation of "natural" radon gas from the earth below could become a significant problem. In fact, large-scale proliferation of fission-energy plants will significantly reduce the natural radioactivity to which the citizen is exposed from the earth's crust.

The argument that the effluent of the Seabrook plant will kill off clams is just plain absurdity. The heat-energy added to coastal waters will increase marine life in that area. Such nuclear-plant sites have quickly become fishermen's paradises.

It is not accidental that many of the people supporting the lying propaganda of the anti-nuclear militants are the same people who wish to swindle and destroy the ecology of New Hampshire by "energy programs" which place emphasis on "low-head" hydroelectric generation and "burning of wood chips." It is not simply nuclear energy which they are against. It is technological

progress which they are against. They are not merely against such progress; they wish to turn the economy of northern New England pretty much back to the level of the seventeenth and eighteenth centuries, as close to the pre-coal age as possible. Some of the financial interests involved, notably Canada-based financial interests, intend to make a large profit on the resulting misery of most New Hampshire citizens, but that is secondary in importance to the fact that they are working, with aid of wild falsehoods, to attempt to turn back the

Table 1

Energy flux density (a)

Energy source	Power density (kilowatts per square meter)
Solar—biomass0001
Solar—earth surface2
Solar—near solar orbit (5 million miles)	1.4
Fossil	10,000
Solar at sun surface	20,000
Fission	70,000
Fusion (early commercial)	70,000
Fusion (theoretical limit)	over several million of trillions of watts

clock on the economy of the United States. Some would call it treason.

Now let us shift our attention directly to the subject of energy policy as such. We refer attention now to *Table 1*, comparative energy-densities and economies of various modes of energy production.

The key figure to use in comparing different methods of gaining energy is energy-density. In the simplest terms, this means measuring the rate of heat (in calories, joules, BTUs, etc.) moving through a square centimeter of cross-sectional area

Comparison of delivered electric power (b)

	Total Energy Costs (mills per kw hr)	Total Energy Price (mills per kw hr)	Capital Investment (billions of \$)
Oil	25.1	45.7	0.94
Coal	24.2	31.7	0.97
Coal Gas	41.7	55.7	1.67
Light Water Reactor	27.8	28.5	1.16
Liquid Metal Fast Breeder	33.7	33.9	1.43
Fusion	45.2	45.2	1.92
Solar Collectors	490.0	490.0	20.9
Solar Cells	680.0	680.0	28.9

of the energy-producing process. Sometimes we look at this in terms of the temperature-equivalent of the energy-generating process. In general, the potential productivity of an economy is limited on the higher side by the energy-density of the basic modes of energy production being used by that economy. The higher the energy-density, the cheaper energy can be in terms of social costs of producing energy, and the more abundant the energy available for expanding the economy.

Table 1 compares known energy-densities and best estimates of economy for commonly discussed modes of energy production. This table shows conclusively why there is no alternative to nuclear-energy development.

Let us begin by focusing attention on what are called "conventional" modes of energy production involving the use of petroleum, natural gas, and coal as fuels for generation of electricity and various forms of large-scale process-heat by utilities and large industrial enterprises. Let us pause for a moment to review the continued uses of petroleum, natural gas, coal, and hydroelectric power as principal sources of generation of electricity and process-heat. (We pass over, just for a while, the matter of vehicular fuels.)

At present rates of consumption and levels of economic activity, the world does not face a necessary shortage of petroleum, natural gas, and coal as fuels. The unavoidable problems with con-

tinued reliance on these fuels are somewhat different than misinformed commonplace opinion so far believes.

There is at least three to four times as much petroleum available as is reported by nations and other major reporting institutions. The problem of supply in connection with petroleum and natural gas originates with an agreement among a London-centered cartel, headed by British Petroleum and Royal Dutch Shell, which controls the overwhelming volume and price of petroleum bought and sold on the world market. It is this cartel which has manipulated OPEC countries into successive rises in their oil prices, in OPEC's effort to keep up with leaps in prices at which its oil is sold to consuming nations by the monopolistic, London-centered petroleum-marketing cartel. If we bypassed that thieving cartel by aid of state-to-state agreements among net-consuming and net-exporting countries, and if we accompanied that with appropriate policies for development of petroleum resources, we would suffer no world petroleum shortage at current trends in consumption rate.

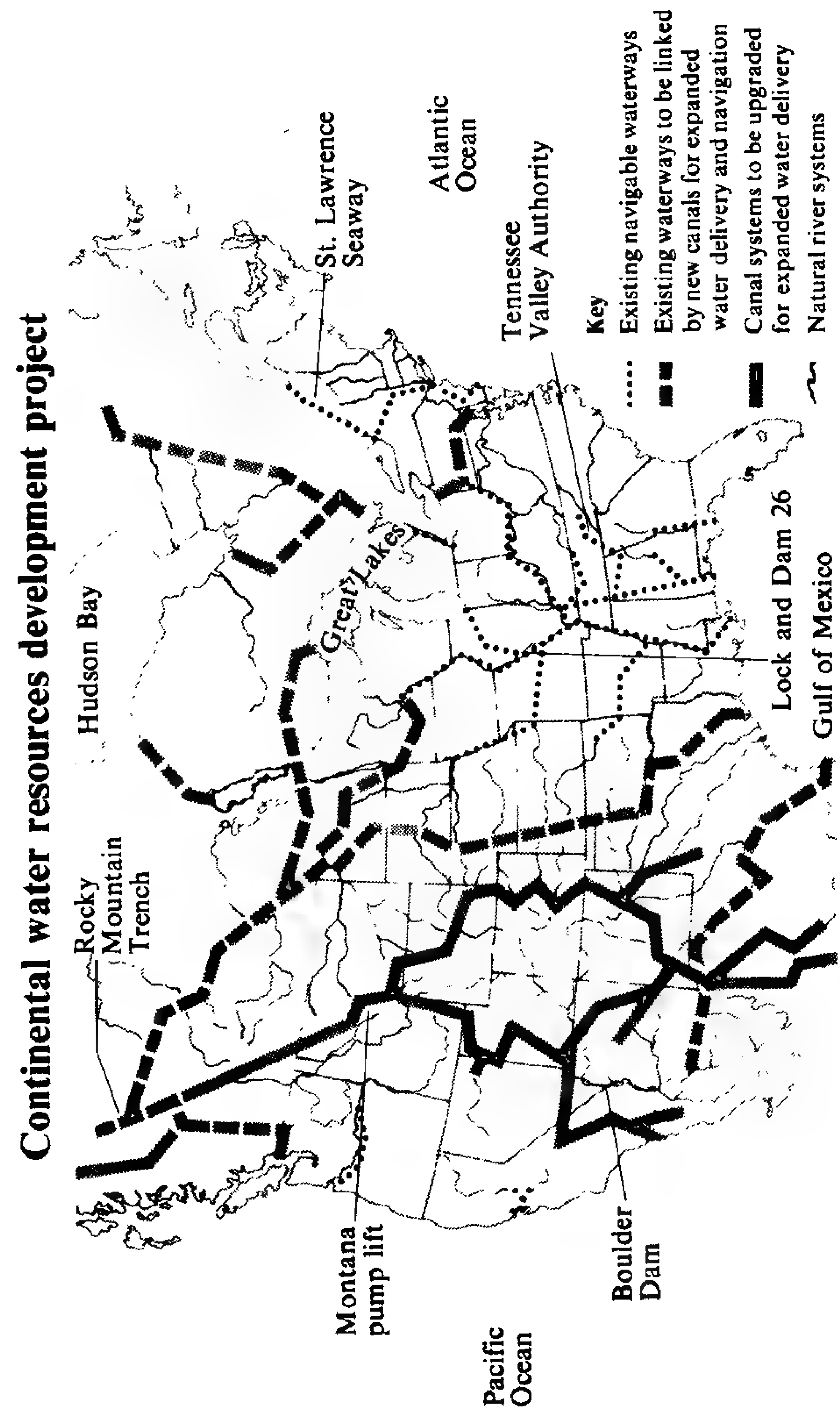
However, even without artificial boosting of petroleum prices by the thieves of the London-centered cartel, the real cost of extracting petroleum must rise over the decades ahead—although by no means at the kinds of rates of increase in oil prices we have suffered since 1973-1974. We face

a related cost problem with the use of our world's rather abundant coal reserves. In addition, continuing to rely upon "conventional" burning of such fuels as a principal source of large-scale energy production means increasing a level of pollution already beyond what we should tolerate.

The "Third World" has massive, untapped hydroelectric potential. As we shall indicate here, it is the combination of development of hydroelectric and nuclear energy which must supply the bulk of the "Third World's" energy requirements over the quarter-century ahead of us now. Ethiopia and other parts of Central Africa have considerable undeveloped potential for high-head hydroelectric development to be installed in conjunction with large-scale water-control projects. Former Indian Prime Minister Nehru's project for developing the hydroelectric and water-resources potential of the Himalayan slopes (for example, the Ganges and Brahmaputra rivers) is the central feature of one of the most magnificent development opportunities available in any part of the world today.

In the United States itself (see *Figure 2*) we must push ahead with a Western continental water-development project which has been waiting on the drawing boards for years. As a by-product of the extremely important water-control project, we shall benefit with a substantial increase in electricity generated by hydroelectric modes. If this development of high-head hydroelectric energy were

Figure 2



Masterplan for continental water resources development by the North American Water and Power Alliance as modified by Calvin Larson, of the Fusion Energy Foundation.

to incur some rise in effective social cost per megawatt produced, that would not be of the same degree of concern to us as comparable rises in the costs of petroleum, natural gas, and coal. Generally, hydroelectric projects are integral features of large-scale water-control projects. The agricultural and related benefits of such water-control projects are so vast, relative to even the hydroelectric component, that these benefits readily offset any minor economic disadvantage incurred in power costs as such.

We can consume petroleum, natural gas, and coal as fuels with far greater efficiency than by present "conventional" means. Exemplary is what is called "magnetohydrodynamic" (MHD) generation of electricity through pushing the ionized plasma of combustion through a magnetic field—cutting out the heat-to-steam-to-dynamo phase of conventional modes. That approach has interesting potentialities in the total spectrum of a sound energy policy, but does not represent the fundamental solution that nuclear-energy development provides.

Returning our attention to *Table 1*, let us compare both the so-called alternative soft energies and the presently proposed "synfuel" programs with the energy-densities and economies of conventional modes. We consider the "synfuel" swindle first.

Over recent years various members of the Lon-

don-centered petroleum cartel and other firms, such as U.S. Steel Corporation, have been buying up much of the United States' available coal and tar fields. This has been done in anticipation of artificially creating shortages of petroleum and refined petroleum product, and using such artificially created shortages as an aid in rigging rises in the price of petroleum products.

The process for producing "synthetic liquid fuels" from coal is a direct copy of the synfuel program used by Nazi Germany. It is by no means irrelevant to us today that one of the principal centers for such Nazi synfuel production was the Auschwitz concentration camp. The program worked, but it was so monstrously uneconomical that it required reliance on working human beings to death in slave labor to produce large quantities of the stuff. The presently proposed "synfuel" program for the United States is identical with that Nazi program—raising the question of which among our citizens is going to be condemned to working at relatively "slave wages" in our Western states to put the program into effect.

The same argument applies to the "tar sands" project. During the early 1970s, the Hudson Institute (of Herman "Megadeath" Kahn) boosted a project involving the Canadian Athabasca tar sands. Kahn's Hudson proposed importing oriental slave labor to Canada for implementing that program.

It is generally argued that petroleum must rise to about \$35 a barrel before the "synfuel" program might become competitive. The present London effort to force OPEC into raising its price to \$30 a barrel or higher brings the situation close to the indicated \$35 a barrel price at which the swindlers behind the scheme might be able to panic the U.S. Congress into fully funding the "synfuel" swindle.

That does not mean that this "synfuel" could be produced at an actual cost of \$30 a barrel or \$35 a barrel. Nor does it mean that this would lead quickly to alternative sources of liquid fuel to replace OPEC supplies. At best present estimate, the first barrel of such "synfuel" would come off the line by about 1990, and would represent an average real cost of about \$90 a barrel in 1979 U.S. dollars. The difference is to be made up—you guessed it!—out of the federal treasury.

In addition to being monstrously costly, the "synfuel" program is monstrously energy-inefficient. Much more fuel is consumed in producing a barrel of "synfuel" than the energy represented by the end-product, the barrel of finished "synfuel." Moreover, to implement the proposed program would require the entire surface-water supplies of our Western mountain states—stripping away water from human consumption and the production of agricultural product! The environmental-pollution effects are off the scale.

Let us consider next, another hideous swindle,

the proposal to increase the burning of wood as a substitute for petroleum.

The proposal of leading Tudor scientists to develop the burning of coal during the sixteenth century was motivated in largest part by the fact that an English economy based on burning of wood was threatened with critical shortages, threatening economic collapse. Even during the latter part of the seventeenth century, colonial towns such as Salem were reporting emiseration of citizens because of inadequate supplies of fuel within access to those citizens during the winter months.

A few figures show us the proper calculations here.

The energy available to produce combustible plant life is a fraction of the 800,000 watts per acre falling on an average acre. The conversion of this solar energy to energy embodied in the trees and bushes of a woodlot is about 0.7 percent. Considering the fact that we require about 1,000 gigawatts (gigawatt = 1 billion watts) by the year 2000 A.D., how many acres of woodlot would be required to make a sizeable dent in that requirement? What would be the real cost of growing, harvesting, transporting that fuel per megawatt-equivalent gained in this way? What would be the efficiency of such combustion relative to other conventional modes? What would be the equivalent to an annual total wage of the cost of the fuel used

to replace petroleum in a New Hampshire home? Even for a state with relatively high ratios of woodlot acreage to total population such as New Hampshire, the proposal to orient the state economy to "wood chips" is sheer economic, as well as ecological, lunacy.

In general, the usefulness of solar energy falling upon our soil is confined to its incorporation in the developing of living biomass, especially vegetable food and the production of animal food by animal consumption of grains and so forth. As a source of "inorganic energy," the burning of biomass is economic and ecological lunacy. The advantage of the solar energy incorporated in foodstuffs is that this energy is organized in a form required by animals and human beings. To restate this point: as biomass, the energy obtained from the pathetically inefficient solar radiation falling upon the earth per acre is of irreplaceable importance. This importance lies not in the number of calories of inorganic energy-equivalent contained in the biomass; the important thing is that that tiny ratio of energy—tiny by industrial standards for fuels production—is in a form of organization indispensable for life.

A strict view of this problem is pinned down with aid of a discussion of use of alcohol as a fuel. From the standpoint of economy, as the price of diesel fuel and gasoline to the farmer is determined by world-market prices for petroleum in the order

of between \$20 and \$30 a barrel, a family farm growing corn on several hundred acres or more finds that it can produce alcohol economically from waste. This may not be the most intelligent approach from the standpoint of the ecology of agriculture, but it does work out economically for the case of alcohol produced on the farm itself.

However, once we extend that argument, to propose to convert the economy significantly to gasohol usage, two kinds of economic insanity take over. Now, the fuel becomes immediately most uneconomical, as marginal alcohol production (exploiting a marginal by-product) is superseded by growing alcohol-producing crops for gasohol production. In addition, every bit of alcohol produced in that way is that much less food for a hungry world. Overall, the result is economic imbecility and morally criminal in effects. Overall, this could not begin to compete with conventional fuels.

Otherwise, looking down the list of "soft alternative energy" modes, down to the miserable "solar energy" itself, the table shows nothing but the irrefutable facts of interrelated energy-density and economy, facts which show that such modes are not only inherently incapable of effecting a dent in our national energy requirements, but that the costs of such modes are orders of magnitude greater than conventional modes.

Our industrial economy, including its agricul-

tural component, is more sensitive to the costs of energy than to corresponding degrees of percentile fluctuation in borrowing costs. To constrict the amount of energy available, so-called energy conservation, is, broadly speaking, a hoax leading toward collapse of our way of life and the collapse of our nation to a third-rate economic power in the world. The increasing of the cost of this reduced amount of energy by orders of magnitude, as "soft energy" modes require, ensures a regression back toward the dark ages.

That leaves us with two essential policy problems to solve in devising our national energy program. We must develop abundant supplies of cheap energy to offset the unavoidable rising costs of development of petroleum as a fuel, and to avoid the pollutant effects of increased coal combustion as conventional fuel. Hydroelectric energy from high-head dams in the context of large-scale water-control projects is one feature of a competent energy-development program. The only other alternative is nuclear-energy development.

In addition, if our economy is to progress, we must break through into a higher order of magnitude in energy-density of energy-producing modes. It is this requirement which bears most directly on the matter of the economics of capital formation. Fission-energy programs, including breeder-reactor programs combined with full-scale fission-waste reprocessing, are the only available

means to get us through the decades immediately ahead. Controlled thermonuclear fusion is the means we require to advance orders of magnitude in the scale and energy-density of the economy during the coming century.

Nuclear-Energy Development as Such

During 1947, the author reviewed the prospects for nuclear-energy development with aid of information given by experts such as Victor Wesikopf. If we had then but continued the approach used in the Manhattan Project, we could have been one or two decades ahead of where we are today worldwide. Unfortunately, at that time, the British government successfully pressured the Truman administration into adopting what was called the "Baruch Plan," so named after the influential Bernard Baruch.

Back in 1947, this author had recently returned from India, and easily—and rightly—recognized that the peaceful development of the "atom" as a new dimension in energy production was key to the kind of development nations such as India required. Unfortunately, the author's tiny contribution to promoting that view brought loud applause on the occasion of one public debate, but he—and many truly influential supporters of nuclear-energy development—saw such efforts overwhelmed by the national hysteria mobilized in support of the Baruch Plan. (One hopes that the

introduction of that personal note may stir up memories among persons of the author's or older generation who lived through the late 1940s and early 1950s as adults.)

Baruch and his friends overplayed their hand. The late 1940s were the eruption of the Cold War, with some hot episodes thrown in here and there. The Baruch Plan was "sold" to John Q. Public on the basis of the incompetent assumption that bottling up nuclear technology within the bounds of military-security wraps would keep the devilish technology out of the hands of them infernal Russkies.

This view was nonsensical. During the 1920s and 1930s, Soviet scientists, as well as Göttingen-centered German scientists, were way ahead of the United States and Britain on the road to creating an atom bomb. It was chiefly economic constraints, not want of scientific capability, that prevented both Germany and the Soviet Union from preceding the United States in developing such a bomb. Now, the details of the work of Vernadsky and others during the 1920s and 1930s and Stalin's launching of the atom operation of 1940 are well known. The gist of this business should have been easily known to U.S. authorities during the 1940s.

The Soviets not only developed an A-bomb during the period Baruch and others were implying them Russkies couldn't, but they continued to

develop an operational H-bomb at about the same time the United States did.

In that setting, the administration of President Dwight Eisenhower inaugurated the "Atoms for Peace" policy, the policy that unleashed the peaceful use of nuclear reactions for energy production.

Our national performance in developing nuclear energy stinks. We have only scores of such plants, where we should have completed hundreds. We are at least a generation behind where we ought to have been in terms of the qualities of nuclear-energy technology presently deployed. Since the passage of that evil Frankenstein's Monster, the Environmental Protection Act, progress has been literally sabotaged.

For example, at present we should require between four and four and a half years to complete construction of a nuclear plant such as the Seabrook installation. The average construction time is currently estimated to be six years, at least up to the point that falsified reports such as that of the NRC and "Kemeny Commission" were used to halt the process almost entirely. The Volcker measures, driving up interest rates into the realm of usury and drying out supplies of credit for medium- to long-term productive investment, have been more significant than the falsified reports in halting the process of construction.

When one stretches out the time required to complete construction of a nuclear plant, now

running about double what it ought to be, the costs of financing construction pile up accordingly. We have seen the price-tag on the Seabrook plants driven up by more than \$1 billion for this reason, chiefly. Under conditions of double-digit inflation and usurious borrowing costs, which the Carter administration has bestowed upon us, the consequences of delays and related "environmentalist" sabotage are monstrous.

Therefore, in assessing the costs of nuclear-energy development, we have to focus on what those costs should be under competent national policy, and not reconcile ourselves to intolerable lunacies which we must forthwith cease to put up with. If we have the will to impose sanity upon the "environmentalists" and their accomplices, nuclear-energy development is highly competitive energy development.

I am persuaded, given the current state of monetary affairs, that we shall have to create an energy-development financing agency to provide medium-to long-term loans to utilities and others engaged in creating adequate petroleum refineries, promoting domestic and foreign petroleum development, and in developing nuclear production of electrical energy and development of nuclear High Temperature Gas Reactor (HTGR) modes of producing economical synthetic methane and other hydrogen-focused synthetic fuels.

It is the duty of the President and Congress of the United States to secure the nation the energy

it requires at prices and efficiencies consistent with continued economic growth. Since the portion of the electorate persuaded to follow that course is the overwhelming majority, we need but elect the President and congressmen who will get at it without more compromising with the saboteurs and other problematics of a discredited minority viewpoint on this matter.

Synthetic Fuel

This brings us to the point we promised to treat earlier in the present discussion of energy features of the economics of capital formation. How do we propose to deal with the supply of fuel to motor vehicles? With requirements of home heating fuel?

Provided we break the back of the London-centered petroleum cartel, which the President of the United States, in concert with France, West Germany, Italy, Saudi Arabia, Iraq, Mexico and others, has the power to do. Provided we secure exporter-importer relations in connection with petroleum by state-to-state agreements among groups of producers and consumers, which Mexico, France, West Germany and others have proposed, and which the President of the United States must do. Provided we develop adequate additional refining capacity to meet current "downstream" requirements for fuels. We have no petroleum crisis for more than a decade ahead—excepting a trend toward rising costs.

Therefore, we must move rapidly to develop an

economical approach to producing synthetic fuels, but we need not plunge into wildly desperate ventures on this account. We should choose the right course of development, and approach its accomplishment in much the same way NASA successfully handled its assigned space projects.

Until we enter the first generation of commercial fusion reactors, the only economical approach for producing synthetic fuels is the High Temperature Gas Reactor. This technology has been developed at Julich, West Germany, and is the essential synthetic-fuel program to which the government of that nation is committed. This is the approach we must adopt, cooperating chiefly with West Germany and France to bring this established technology to perfection for first and second generation applications.

Our initial emphasis in deploying HTGRs should be the production of synthetic methane, which is—chiefly—pumped into our gas pipelines, present and enlarged networks. This will supplement the use of natural gas, and provide a growing basis for reorienting large portions of industrial and home fuel consumption to low-polluting gas usages.

As we enlarge the deployment of HTGRs, we shall be establishing the base-line for large-scale production of hydrogen-based synthetic fuels suitable for use in motor vehicles and aircraft. This approach, properly developed, means a basic so-

lution to the problem of automobile and related pollution.

What we must emphasize in the design of the combustion processes within chemical fuel-powered vehicles is bypassing the combustion of nitrogen as a by-product of the basic combustion process employed. There are various approaches which totally or virtually eliminate that most crucial aspect of the inherent pollution problem of today's gasoline and related vehicles.

During the years immediately ahead, we ought to concentrate on providing investment tax-credit incentives for perfection of the appropriate technologies for the vehicles of the late 1980s and 1990s. Both converging efforts, power-plant perfection of design and development and creating a base-line of HTGR synthetic fuels production, should be aimed at a target-date for broad-based conversion of the economy to vehicles built around the new fuels programs.

As a matter of the kind of rule of thumb political planners should employ, it would be reasonable to dedicate the decade 1980-1990 to accomplishing that conversion. Let us not repeat the kind of lunacy national practice exhibited in connection with the misdirected approach to cleaning up vehicular exhausts. This time, let us do the job right.

The key to the advantage of the HTGR approach to synthetic fuels over the "synfuel" swin-

dle currently pushed through the Congress and Executive Branch is symptomized by the temperatures at which an HTGR operates. The Nazi package is vastly wasteful, uneconomical, and polluting—all of which defects reflect the intrinsic inefficiency of the approach employed.

Thermonuclear Fusion

There is no obstacle which should prevent the Soviet Union from reaching its target of proving a successful experimental controlled fusion reaction by about 1981-1982. If the Carter administration had not sabotaged our own nation's fusion-development program, we might have met or beaten that Soviet target. If we used NASA-like methods to develop commercial fusion reactors, a timetable of the early 1990s for operating, first-generation fusion reactors is reasonable. The analysis of such problems by the Atomic Energy Commission and its successor agencies, ERDA and the present Department of Energy, is a fair country estimate of the situation under various levels of commitment to development efforts.

The first-generation commercial fusion reactors will be a useful addition to our energy repertoire in and of themselves. However, we have a more fundamental, longer-range objective in view.

During the next century, the world will run out of many of the things we now regard as primary resources. "Conservation" will only postpone the

problem, not solve it. In fact, "conservation" is the most imbecilic approach to the problem one might adopt. What we must do is to move as rapidly as possible to that higher level of technology in which we extract needed materials from the very lowest grade of "ore sources," ordinary rock. If we do not make that breakthrough, our civilization will die. If we resort to a foolish policy of "conservation," we cannot make the breakthrough which ensures the survival of civilization.

As in most serious matters, one must not make the blunder of being trapped into accepting what might appear to be the proper solution to a problem first-hand. One must think through the consequences of any choice of policy. The policymaker who does not think twenty years, even a century ahead, is more often a menace than an advantage to his nation and the world. The test of a qualified leader of a republic, such as our own was created to be, is his or her ability to think through the effects of present policy-choices for our nation's posterity. Without thermonuclear fusion, our civilization will not survive the next century.

With thermonuclear fusion, we can do what we could never do with conventional modes of energy production or even with fission energy. We can distill rock, converting it into a plasma and subjecting that plasma to economical forms of separation of its constituent kinds of elements. If that

does not satisfy us, we can transmute material. In the same way, we make possible new kinds of uses of materials which are not presently economical for use. And so forth and so on.

The first-generation commercial fusion reactors will not accomplish that. Those first-generation reactors will probably be, according to present estimates, approximately competitive with today's fission reactors. No matter. By launching a commercial fusion industry, we are providing the indispensable new kind of industry which will produce second- and third-generation fusion reactors.

This takes us back to the point we outlined at the beginning of this chapter. The step-by-step advance from a full-scale fission-energy economy into a fusion-energy economy is the unique path of development which enables our nation and the world to increase the effective rate of capital formation into the next century and beyond. It is the only policy which leads to the successful survival of our civilization.

2

THE PROPER MEANING OF "ECONOMICS"

The reason we are able today to speak of the "economies" of such societies as ancient Rome is that we are able to compare the internal features of those societies with internal features of modern nation-states or "national economies." "Economies" in the strict sense of the alternative terms, "political economies" or "national economies," were not conceived of until the fifteenth century, and did not exist in fact until France's King Louis XI created that state as the first modern nation during the closing decades of the fifteenth century. Largely because of the direct and indirect effects of Louis XI's success, England also emerged as a nation-state (a "political economy") under the Tudor monarchs Henry VII and Henry VIII. It was the consolidation of these two nations as nation-states during the sixteenth century which inaugurated a new era in mankind, the era of the

sovereign nation-state, the era of the “political economy” or “national economy.”

To understand how European civilization developed, we properly divide the period from Charlemagne to the onset of World War I into two distinct large periods.

The first period extends from the work of Charlemagne and his adviser Alcuin in attempting to create a state coextensive with Christendom, the founding of the “Holy Roman Empire.” This period extends, with all its included crises and ups-and-downs, into about 1260-1270 A.D. The period ends with the defeat of the Hohenstaufen, the concurrent dethroning of Alfonso “The Wise” in Spain, and is closely associated with the final collapse of the last vestige of Arab civilization in the Middle East during that same period. From the fall of the Hohenstaufen through the conclusion of the pandemic Black Death, the population of Europe was shrunk by about half during a century properly described as a “new dark age.”

Out of the ashes of that dark age there emerged the “Golden Renaissance,” during which the foundations of the future order of sovereign nation-states were established by a Neoplatonic Augustinian, anti-Aristotelian current typified by Cardinal Nicholas of Cusa, Plethon, and Cosimo de’Medici. That inaugurates the second period.

The present century of two World Wars and imminent efforts to “return” to the “one world”

policies of the pre-fifteenth-century Europe, marks the threatened onset of a new dark age—possibly even the self-extinction of the human species this time around.

The conception and practice of “political economy” or “national economy” emerged as a by-product of the deliberate effort to create the sovereign nation-state as successor to the idea of Christendom prevailing in the earlier period.

The inherent and repeatedly illustrated flaw of the old notion of Christendom was the error of attempting to unify the populations of Europe around the use of Latin as the *lingua franca* of administration and policy-formulation. This arrangement left the mass of common people with a brutish sort of common language, whose general usage involved the proverbial “five hundred word vocabulary” plus peasant grunts. Just as the evil feudal mullahs of Iran mobilized the crazed and superstitious peasant of Iran to destroy that nation—under the banner of the insane Ayatollah Ruhollah Khomeini—so in the history of the old Christendom lunatic *jacqueries* and other manifestations of the brutalized moral and intellectual condition of the majority of the common people were mobilized by opponents of civilization to plunge humanity into genocidal conditions of famine, epidemic, and homicidal social chaos resembling, more recently, the Thirty Years War (1618-1648) in central Europe.

The new approach, the creation of sovereign nation-states based on unity around some dominant spoken language, was not intended simply to enfranchise the ignorant. Directly the contrary. Beginning with the political declaration of Dante Alighieri on the eloquence of the Italian language, the tactic was to educate the commonly spoken dominant language into a cultured language, a language capable of communicating scientific conceptions and conceptions of corresponding profundity and importance. The object was to raise up the intellectual and moral condition of the people.

The work of Dante, Boccaccio, Petrarch, Wycliffe, Chaucer, and others prior to the fifteenth century is to be viewed from that standpoint. The printing press was not "discovered" during the course of the fifteenth century. The development of printed books and pamphlets was a strategic decision by the leading Neoplatonic, anti-Aristotelians of that age. Their chief aim in this connection was to lift the spoken languages of Europe out of the bestiality of peasant-like vocabularies and usages into elegant languages, enriched by the Platonic mode of ideas found among ancient Greek writers, their Latin copyists, and the greatest literature of the Apostles and patristics.

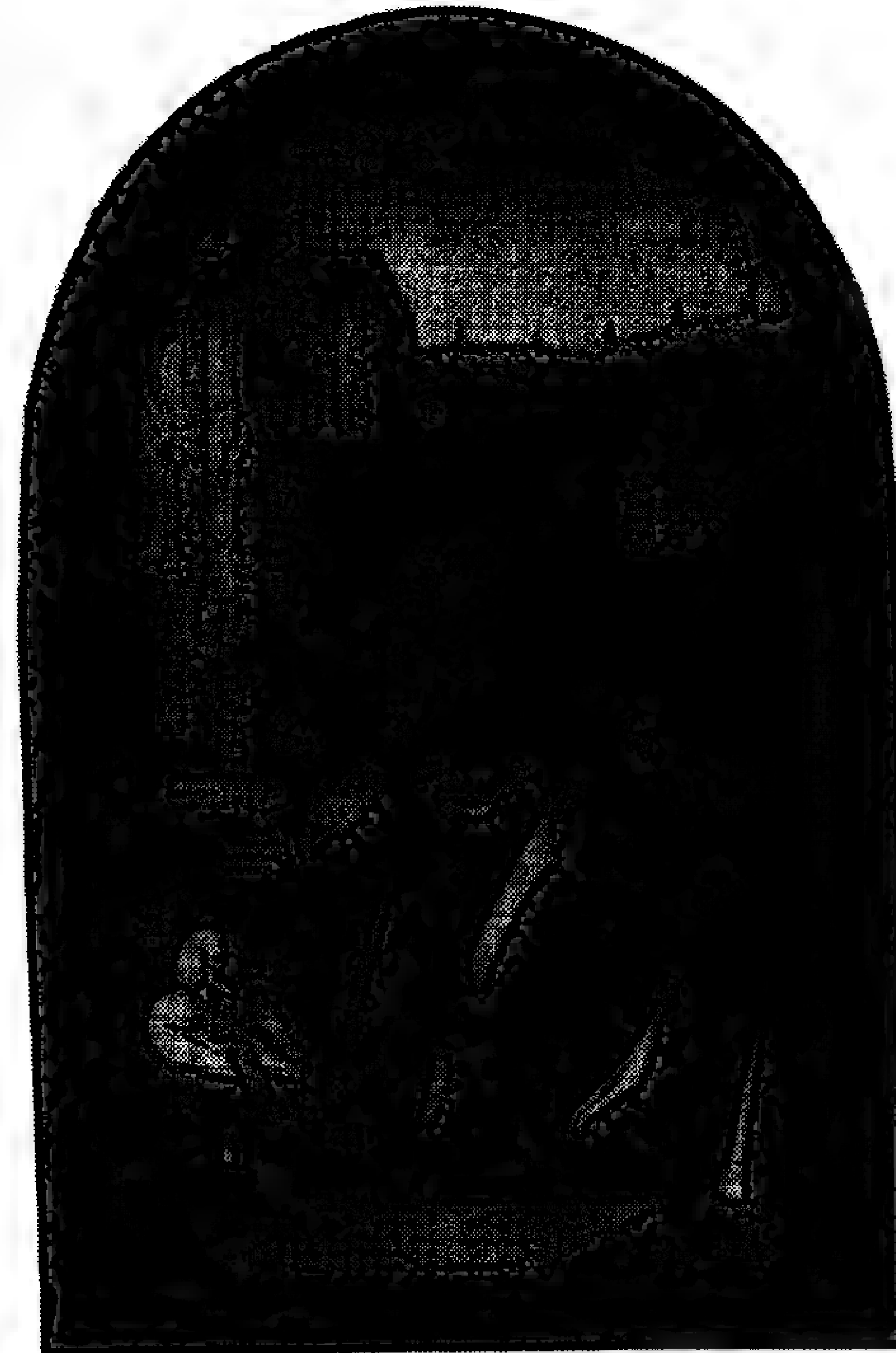
The original, fifteenth-century thrust of this movement was focused on Dante's project, for creating an Italian republic. Padua and Florence

were the centers of this initiative; the enemies were the same families that had been Dante Alighieri's enemies more than a century earlier, the "Black Guelph," the "black nobility" of Rome and Genoa—the Colonnas, the Pallavicinis, and the like—together with the Black Guelph's allies, the Burgundian-Hapsburg house. The developments leading into and following the Savonarola episode weakened Florence at a crucial point, after which the Spanish forces controlled by the black nobility and, later, the Hapsburgs, proved too much a force, on balance, even for the brilliant Cesare Borgia to crush—despite such brilliant Borgia aides as Niccolò Machiavelli and the Archimedes-like Leonardo da Vinci.

Before the black nobility and Hapsburgs completed their crushing of Italy and the early sixteenth-century destruction of Germany, the genius nurtured in Italy was implanted in France, England, and the Netherlands. As the cases of Louis XI and Henry VII and Henry VIII illustrate amply, the central thrust of creating the nation-state for them was a policy of "political economy" or "national economy." During his reign, Louis XI increased the per capita wealth of France, outwitting those enemies who underestimated the means by which Louis chiefly brought France out of its worst troubles, through the means made possible by fostering the commerce of France as a means for fostering the growth of the productivity of

France. The Tudor kings sponsored technological innovation and scientific discovery even more energetically than was visible in Louis XI's policies. It was in Tudor England that the patent for production and commerce in the product of a technological innovation was transformed into the legal root of the modern industrial-capitalist property title.

During the sixteenth century, the alliance of circles around the Tudors with France's House of Navarre was richly developed. Meanwhile, as Erasmians such as François Rabelais were revolutionizing the French language, so in England. It was during that century that the English language of Marlowe, Sydney, Shakespeare, and Milton was developed out of the relatively crude beginnings available—largely with emphasis on borrowings from the Italian language, aided by such key advisers of both the Tudors and Navarre as Giordano Bruno. There was a far better English than is spoken in Britain or the United States today, a language more suited to profound and important scientific and other conceptions than the degraded usage of our language permits in ordinary intercourse today. On the French side, the political-philosophical current associated with the development of the new nation-state culture became associated with the name *politiques*, with such figures as Jean Bodin. The idea of the "Commonwealth Party" was shared on both sides of the Channel in that way.



Builders of the nation-state: Louis XI of France



*Henry VIII
of Tudor England*



Jean-Baptiste Colbert

With the accession of the Genoese-linked James I to the throne of Britain, the English economy decayed, but the Commonwealth Party enemies of James I and Charles I prepared for their counter-offensive. Their allies in France were Henry IV, Père Joseph Tremblay, Cardinal Richelieu, later Cardinal Mazarin, and ultimately Richelieu and Mazarin's successor Jean-Baptiste Colbert. The Commonwealth Party of England, the party of Cromwell and John Milton, was the ally of Mazarin and Colbert.

It was during the seventeenth century that the Commonwealth Party laid the foundations for what was to become the United States on the Atlantic shores of North America. We Americans owe nothing worthwhile culturally to the British, but we do owe the germ of our national character to that English republican party which beheaded Charles I. Indeed, the American Revolution was, in a most profound sense, the Second Commonwealth Party Rebellion against the evil of the British monarchy.

It was Colbert who systematized the practice of political economy. It was Colbert's youthful German protégé Gottfried Wilhelm Leibniz who isolated the scientific principle at the core of effective political-economy practice, laying the foundations for a scientific political economy in his 1671 *Society and Economy*.

As we shall see, the British and Marxist propaganda which ranks Bacon, Hobbes, Locke, New-

ton, and Boyle as the great modern philosophical thinkers also ranks such scalawags and frauds as William Petty, the French Physiocrats, Adam Smith, and David Ricardo as “the” great pioneers in political economy. No propaganda could be further removed from the truth.

After Leibniz, the next great writer on political economy was President George Washington’s Secretary of the Treasury, Alexander Hamilton. Most notable are Hamilton’s 1790 *Report on Public Credit*, his 1790 *Report on a National Bank*, and his 1791 *Report on the Subject of Manufactures*. It is these three policy-papers of the George Washington administration, issued by Hamilton, which embody the foundation of what was defined during the subsequent century as “The American System,” a system axiomatically opposed to every principal feature of the writings of Petty, the Physiocrats, Adam Smith, Thomas Malthus, and David Ricardo . . . as totally opposed to the “British System” of political economy as the bare facts of the American Revolution demonstrate conclusively.

Excepting such republican scientists as Franklin’s ally Joseph Priestley, eighteenth-century American culture gained little from Britain itself. The primary input into the development of the culture of the future United States was from the networks of the Commonwealth Party’s allies on the European continent, the networks associated

with Colbert and Colbert’s protégé Leibniz. It was from the French Colbertistes that the Americans acquired their learning in political economy—not the British or the French Physiocrats.

The same was true for industrial technology. Contrary to the frauds told too often in our university and public school classrooms, France, not Britain, was the leading industrial nation of the middle through late eighteenth century, as well as the most advanced in rate of growth and technological progress of its industrial sector. The basis for this superiority of France’s industrial growth was chiefly the work of Colbert during the latter part of the preceding century. France’s advantage, relative to the rate of growth in Britain itself, was enhanced by the hatred of industrial-capitalist republicanism among the allied forces of the City of London and Amsterdam finance and the sections of the British aristocracy which had come into almost unchallenged power following the overthrow of the Commonwealth. Hence, the eighteenth century witnessed large numbers of skilled and semiskilled English workmen fleeing from industrial stagnation in Britain to the ready opportunities in industrially expanding France.

If we examine the Colbertiste currents in eighteenth-century France, and their interconnection with the networks of Leibniz’s followers throughout Europe during that time, we uncover the evidence which removes all mystery respecting the

inputs into Hamilton's cited articulation of the principles of policy of the American System. It is not properly astonishing to discover, from that standpoint, that the first qualitative refinement, beyond Hamilton's political-economic principles, occurred in France of the 1790s Thermidorean period and proceeded further during the first decades of nineteenth-century France. The names of the leading, pioneering French economists of that period are François Ferrier, Claude Chaptal (1756-1832), and Charles Dupin. Although these political economists are known merely as recognized names in present-day literature in even France itself, these three figures contributed vitally to the more rigorous restatement of the American System that was facilitated by Friedrich List during the period from about 1818 through Lincoln's two administrations.

Although Ferrier, Chaptal, and Dupin are important intellects in their own right, it would be to miss the point to see them merely as the most influential economists of the Napoleonic period and its immediate aftermath. All were associated with a French circle dominated by Gaspard Monge (1746-1818) and Lazare Carnot (1753-1823), a circle assembled around Carnot's leadership in the establishment of the Ecole Polytechnique.

It was Lazare Carnot, not Napoleon Bonaparte, who made post-Jacobin, pre-1815 France the economic and military power it emerged to be during

that period. Correspondingly, it was fear that Carnot would take command of French military forces, after the defeat of Napoleon, which dissuaded London from pursuing the attempted dismemberment of France. If we examine Carnot's military reforms more closely, taking into account the collaboration of Monge and Carnot in developing a small generation of geniuses around the orbit of the Ecole Polytechnique, we see how breakthroughs toward the establishment of a theory of functions of a multiply-connected manifold, and breakthroughs in economic science flowed naturally and rather necessarily from the work of the group centered around Carnot.

For example, one of the crucial features of the revolutionary transformation of warfare by Carnot was the completion of the development of mobile artillery. This was enabled by developing superior steel for cannon, which was possible because of "dirigist" fostering of the superiority of French iron and steel manufacturing over that of other nations. The mobile artillery of France was the centerpiece of a revolution in warfare. The centerpiece, not the entirety of the matter. It was in connection with the logistics of warfare that Carnot created a new kind of instrument of warfare, just as the German Scharnhorst subsequently incorporated that same approach to the development of Germany's new type of military capabilities.

Look back from Carnot's work of that period

to a revealing sidelight of Leibniz's work more than a century earlier. Leibniz prescribed the development of the breech-loading gun, including a breech-design principle for cannon during the seventeenth century! In the same proposal, Leibniz defined the use of the cartridge and outlined the radical change in the mode of warfare such innovations implied.

The development of republican military doctrine, beginning with the work of Niccolo Machiavelli, emphasizes not only the principle of universal military training of the republican militia—a people qualified in arms. The republican militia principle, of in-depth war-winning capability, is associated with the fact that the more cultured republican population has an inherent potential advantage in its capability for employing revolutionary advances in technology in the conduct of warfare. The realization of the republican potentials of in-depth war-winning advantage is therefore inseparable from the promotion of scientific progress and high-technology capital-formation rates in the “civilian economy.” Both sides, warfare and civilian production, are but interconnected, interdependent facets of the development of the power of a nation, a power which flows from the promotion of fundamental scientific progress and the technological potentials of such progress.

An example is the development of the old steel-

making center around Metz, France, a center with which the name of Chaptal is associated. Here, we see reflected the interconnection between civilian and military power as Carnot's circles correctly understood the matter.

Carnot's work is to be compared with the case of the United States' wartime Manhattan Project and the comparable case of the development of NASA. Whenever leading scientific and engineering competence is assembled around the task-orientation of solving the need for a qualitative breakthrough in military and related matters, not only is there a massive benefit to the civilian economy, but a task-orientation of concerted practice most favorable to scientific progress. Most human progress has occurred through such “crash programs” and their like.

In the preceding chapter, we stressed the connection of energy to economic progress. We shall turn to that matter more emphatically as we focus later on the author's own fundamental contributions to economic science. For the moment, it is sufficient to stress that the circles of Monge and Carnot, and their immediate posterity, are famous in science for their decisive contributions to furthering the development of thermohydrodynamics, including a Monge-influenced “geometric” approach to this, producing the foundations of the nineteenth-century theory of functions. It is instructive to compare a posthumously published

paper of Lazare Carnot on directions for the development of notions of political economy. This paper embodies the method of the turn-of-the-century French thermohydrodynamicist school in the approach to the problem of political-economic development, the problem as earlier defined by Leibniz.

Although the reader may not be informed of the internal matters of the so-called physical sciences, the following statements should be made here as a mere statement of fact. The point is to emphasize that the Carnot school's approach to the central problems of political economy is identical with the approach by which "Continental science" produced all the fundamental scientific breakthroughs of the nineteenth and twentieth centuries to date.

The work of Monge, Lazare Carnot, Sadi Carnot, and Fourier laid the basis for the breakthroughs of Germany's Karl Weierstrass, Bernhard Riemann, and Georg Cantor during the middle-to-late nineteenth century concerning the comprehension of the existence of and ordering of discontinuities within what might otherwise appear to be continuous functions. Weierstrass's work, for example, is to be situated historically in the background-setting of Fourier analysis. This development established what is properly termed "the theory of functions of a multiply-connected manifold," or, stated in less rigorous language, "functions in the complex domain." That accom-

plishment, embedded in modern physics by the work of Bernhard Riemann, led directly to Erwin Schrödinger's initial solution to the unworkable, paradoxical features of the electron in the inadequate physics of J. Clerk Maxwell, and led to the understanding of the methods for effecting isentropic compression in controlled thermonuclear reactions, the latter the frontier of practice of physics today. This was all a direct continuation of the faction in science associated with Leibniz, the "Continental science" of Cusa, Kepler, Gilbert, Leibniz, Euler, the Bernoullis and so forth, which was the factional standpoint—against Bacon, Newton, Boyle—of Carnot's circle and Germany's Göttingen. This current is identified variously as "Continental science" and as the "hydrodynamicist" faction.

The approach to science generally and political economy in particular by "Continental science" currents involves the exact same method, from Leibniz's work on political economy through this author's own breakthrough in establishing what has been more recently termed "Riemannian economics." That approach of "Continental science" to economics is the background and underlying feature of the American System, from Hamilton's cited policy-papers through the accomplishments of the present author in the same field.

The American System suffered setbacks under Presidents Thomas Jefferson and Madison. The

miserable condition of the U.S. military forces in our nation's second war against our enemy Britain, "The War of 1812," plus the lack of a coherent command for those U.S. forces, illustrates how grievously British influences, such as that of Albert Gallatin, had subverted Jefferson, Madison et al. Up to about 1818, the United States' economy was being ruined by an orgy of adaptation to Adam Smith's evil doctrine of "free trade."

This collapse of the U.S. economy created the popular outcry for remedies which aided President Monroe and the Whigs in turning the United States of 1818-1828 back to the American System of Hamilton et al. The revolutionary development of West Point under Commander Thayer, the renewal of Hamiltonian credit and banking policies under Nicholas Biddle's direction of the Second National Bank of the United States, and the vigorous "dirigist" promotion of technological and basic scientific progress under Monroe and John Quincy Adams revived our national progress—later to be wrecked under the leadership of Presidents Jackson and van Buren. The Panic of 1837 was the inevitable outcome of a new, Jacksonian orgy of "free trade," as Jackson turned U.S. credit over to the mercies of the London-allied Manhattan private-banking interests.

The leading spokesman for the post-1818 revival of the American System of political economy was Mathew Carey, who ranks as the next important

economist in our national life after the death of Hamilton.

Mathew Carey had been the leader of Irish resistance against Britain, forced to flee to Paris, where he became a close associate of Benjamin Franklin. He became a leading figure of the United States' secret-intelligence organization, operating under the cover of a publishing house, as Allen Salisbury documents the matter in his *The Civil War and the American System*.² It was Mathew Carey, earlier a collaborator of Hamilton's as well as Franklin's, who revived Hamilton's policies and led in the attack on the evil, ruinous doctrine of Adam Smith's "free trade."

Into this fight for the American System stepped a German immigrant, a protégé of the Marquis de Lafayette bearing letters of introduction from Lafayette—Friedrich List.

To understand the significance of List, we must again make a brief explanatory detour.

One of the notable, evil conspirators against the United States, the late Herbert Marcuse, is reported to have begun each of his classes to his students in Germany with the advice, "there are no conspiracies in history." All sorts of people

2. Allen Salisbury, *The Civil War and The American System, America's Battle with Britain, 1860-1876*, (New York: Campaigner Publications, University Editions, 1978).

babble hysterically nowadays, "I don't believe in conspiracies." Nonsense. As Benjamin Franklin documents in his *Autobiography*, the United States was created by a conspiracy subsuming Franklin's own Junto network. As the evil, Cambridge-trained British agent Charles Beard complains in his *Economic Interpretation of the U.S. Constitution*, it was a conspiracy centered in the Society of Cincinnatus which completed the work of developing the United States as a federal constitutional republic. This was not merely a U.S. conspiracy, but a transatlantic network based on the old transatlantic conspiratorial collaboration among the Commonwealth Party and the forces identified with both Colbert and Leibniz on the European continent.

Lying historical accounts go so far as to admit that it was France and the wider League of Armed Neutrality against Britain which was strategically decisive in enabling the United States to secure its freedom from our British enemies. However, through either mere ignorance or outright lying, those accounts conceal the way in which France was maneuvered into supporting the United States, how Russia and Spain, among others, were maneuvered into joining the League of Armed Neutrality. It was networks of conspirators, led by Benjamin Franklin, and based on the networks of Colbert and Leibniz, which worked from within each of those nations to maneuver those nations'

national policy into support of the American cause.

At the close of the war, the transatlantic networks associated with Franklin's leadership earlier were significantly reorganized by the establishment of the Society of Cincinnatus, based on the officers of the Revolutionary War and their first-ranking descendants. Although the Society today is a pale echo of what it was before, say, 1840, it is notable that the members of those families are outstanding for their record of dedication to military and other public service on behalf of the United States down through the recent postwar period. In older times, the Society was a much more formidable proposition internationally as well as domestically.

The head of the Society at its inception was George Washington, with the Marquis de Lafayette and Baron von Steuben outstanding representatives of the French and German branches, respectively, of the Society. During the 1820s and until his death during the 1830s, the Marquis de Lafayette was the chief executive within the society coordinating efforts in the United States' interest throughout Europe. The American Whigs interconnected with Mathew Carey's Philadelphia operations—including Clay, John Quincy Adams, and numerous other prominent Whigs—interconnected with Lafayette's networks in Europe to constitute what was in fact the United States secret-intelligence organization of that period—

down into the course of the Civil War. Although this secret-intelligence organization heavily overlapped West Point and the U.S. military officer corps, it was not formally an official agency of the United States government, even though Chief Justice John Marshall was de facto authority for issuing secret passports and such paraphernalia for a time. It was rather a body of Americans dedicated to promoting the policies and cause of the American Revolution against both subversive, pro-British influences within the United States and British accomplices abroad.

In Franklin's time, the European side of the network had included such German luminaries as Herder, Wolfgang Mozart, and Friedrich List. One of the major centers of the German allies of the Americanist cause was the publishing house of von Cotta in Stuttgart. This was the home base for the young Friedrich List.

List arrived in the United States by way of Paris. In Paris, List, like Heinrich Heine a few years later, attached himself naturally to the orbit of Lafayette, while focusing study on the political-economic contributions of Dupin and others. It was in this circumstance that Lafayette dispatched him to the United States in 1825. List arrived near the close of Lafayette's own visit, and remained in the United States for five years, leaving in 1830, after assuming United States citizenship.

List was assigned to the circle headed by Ma-

thew Carey in Philadelphia. While working closely with the Philadelphia Association for the Promotion of National Industry, List was assigned to edit a newspaper, the *Reading Adler*—the predecessor of the present-day *Reading Eagle*. List worked to influence the concentration of German-American residents of that area. His more general work was that of an emerging leading economist, writing books, pamphlets, letters and giving addresses on the subject of the American System.

After acquiring U.S. citizenship, List returned to the von Cotta circles in Germany, conducting his part in the effort to establish the German Customs Union (*Zollverein*). Later, Henry C. Carey, a student of the work of both his father and List, assumed the position of the leading American economist, holding that position throughout the 1840s, 1850s, and 1860s.

It was the economic policy of the American System which was used to build German industry, on the base of development established through French influences during the Napoleonic period. A related development occurred in Meiji Restoration Japan, where the American System of Hamilton, Carey, and List is acknowledged to the present time as the intellectual basis for Japan's economic miracles.

The bankrupting of Lincoln's financial operative, Jay Cooke, and the subsequent establishment of the 1879 Specie Resumption Act took control

of the major credit of the United States out of the hands of representative government, and placed our national credit at the mercies of Manhattan-centered financial interests which were chiefly extensions of the City of London's major financial interests.

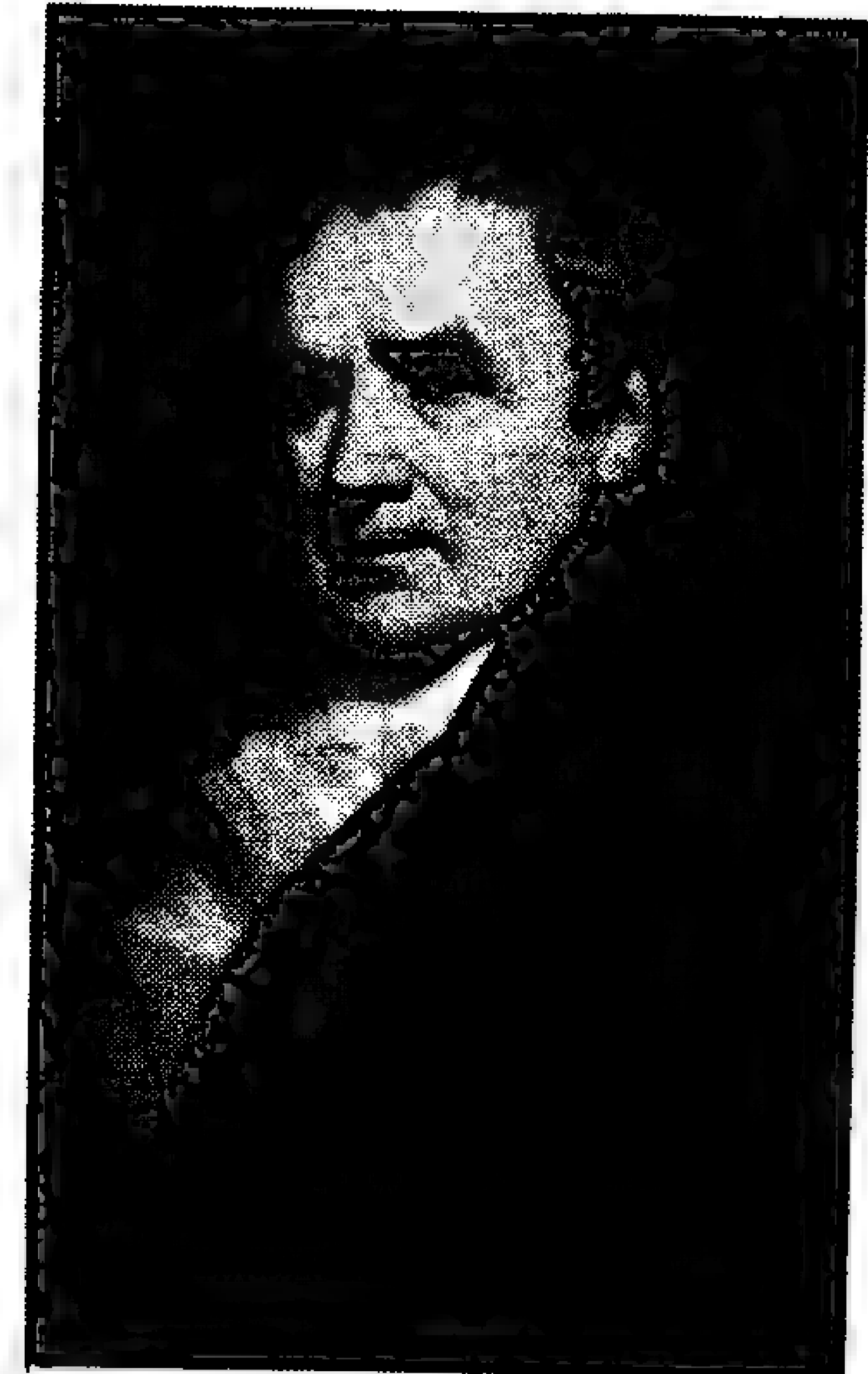
Lincoln's administration, by destroying the London allies of the slave-owning oligarchy, and effecting a sweeping industrial revolution under wartime conditions, had so consolidated our national economic character that the American way of doing things was the predominant feature of our national character until the massive subversion of our youth and institutions during the recent two decades. Yet, in the Manhattan-centered financial institutions, and in the corruption of our universities and other centers of culture, especially during the course of the present century, we have become increasingly a semicolony of Britain in respect to the intellectual life of our "Eastern Establishment"-centered policy-making circles and the orchestration of our national credit and economic policy under the arrangements associated with the Federal Reserve System.

At bottom, most of us continue to be Americans in our acquired habits of mental outlook, our better impulses. Unfortunately, due to our national news and entertainment media, as well as our universities and associated intellectual life "at the top," our nation's image to the outer world has



*Builders of the
American System:
Benjamin Franklin*

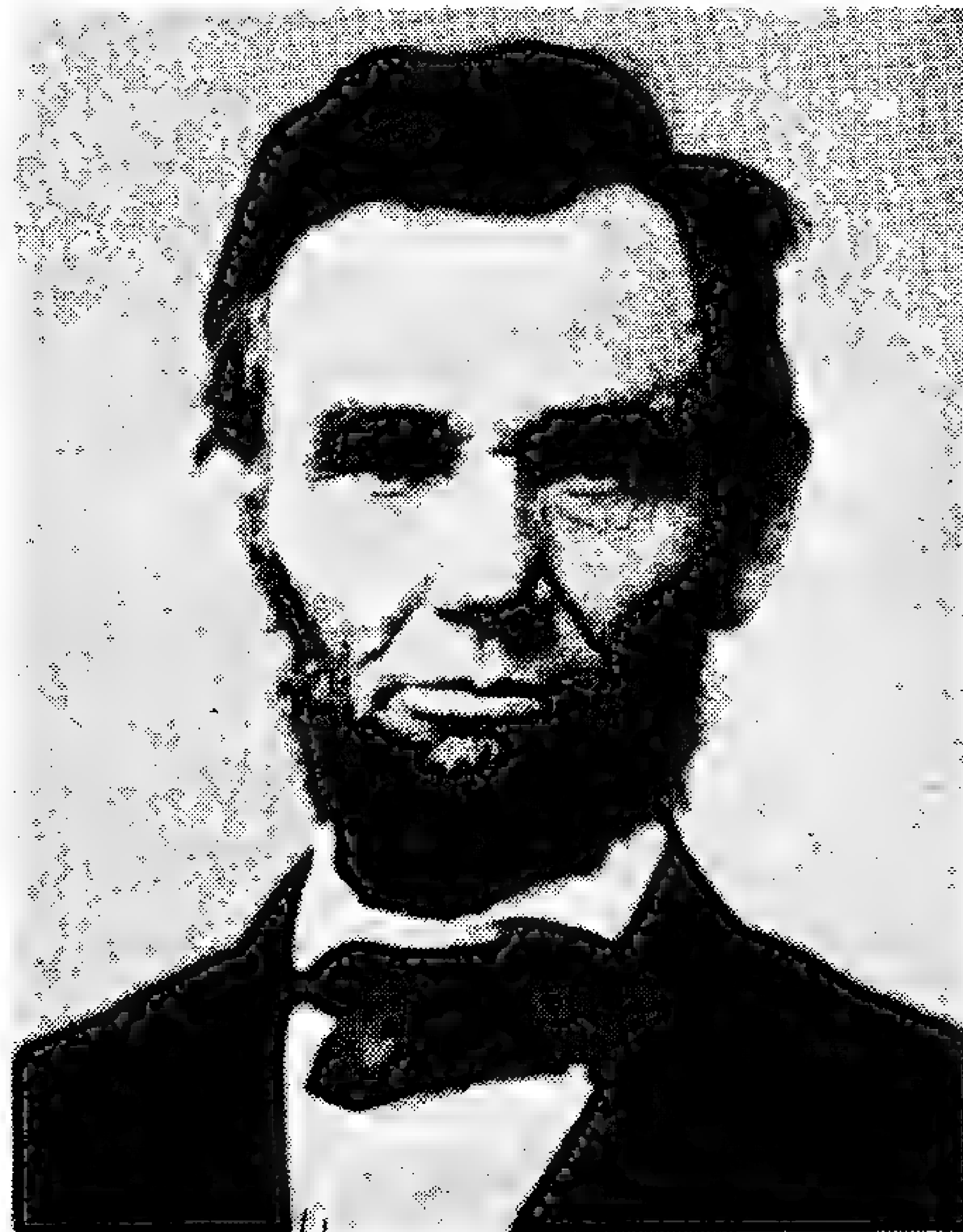
Mathew Carey





Friedrich List

Abraham Lincoln



become increasingly a kind of “Anglo-Americanism” which would have rightly prompted the majority of our founding fathers to vomit.

Those who profess that Adam Smith’s *Wealth of Nations* somehow reflects the policies that led our nation to economic greatness of former decades are either simply miseducated or, in numerous cases, lying. Although copies of that piece have been suppressed, in 1783 Alexander Hamilton wrote an attack on Smith’s *Wealth of Nations*. Although Hamilton’s cited three policy-papers of 1790-1791 make no mention of Smith per se, it is conclusively clear from those sources how total Hamilton’s opposition to Smith was in fact.

It could not be otherwise. Smith’s book was written on the eve of the American Revolution. Apart from the large section of the *Wealth of Nations* devoted to lying respecting Colbert and other matters, there is nothing original in the book. It was an attempted propaganda-piece in defense of those same policies of the British East India Company against which America’s struggle against Britain had been focused since 1763. In that sense, the American Revolution was made against the evil policies of Smith’s *Wealth of Nations*.

Beginning with the post-1815 work of Mathew Carey, Friedrich List, and Henry C. Carey, the Americans’ denunciation of Smith, Malthus, and Ricardo as frauds was most explicit. Not only

were Smith, Malthus, and Ricardo rightly denounced as fraudulent economists promoting evil practices, the Americans understood that Britain was still America's enemy.

This denunciation of the evils of the British System of political economy persisted over the period 1783-1863 during which Britain was dedicated to the destruction and reconquest of the United States.

That attempt to destroy the United States Palmerston and Lord John Russell gave up only in 1863, under direct threat of Russian military action against any European power which might ally itself with the Confederacy. The combined weight of Russian power and the United States' growing industrial and military capabilities under Lincoln's leadership obliged the British to give up attempts at military destruction of the United States, and to shift the emphasis toward a more concerted approach to subversion. The Morgan and Rothschild interests exemplify the central thrust of that post-Civil War effort at subversion.

The turn-of-the-century turning away of American universities from close links to universities of the European continent, and toward slavish submission to the influence of Oxford and Cambridge universities in England combined with the widespread Deweyite and Fabian subversion of our liberal and radical strata to corrupt our leading institutions increasingly at the top both morally and intellectually.

Under these post-Civil War circumstances, with the prolonged defeat of Lincoln's Reconstruction policy of industrial development of the Southern states, the United States produced virtually no additional, competent political-economic thinkers. Only the perpetuation of Whig influences embedded in key families within both the Republican and Democratic parties gave voice to echoes of what had been, up into the 1860s, a clear perception of both the principles of the American System and of the adversary nature of the British System of political economy.

The present author has reflected often on the contributing influences which have made him the first important American System political economist since Henry C. Carey and Carey's collaborators of that period. In part, the strongly imprinted childhood influences of New Hampshire's Whig tradition played a part in this, as did resentment at the folly of the 1930s Depression.

Remember, our nation underwent a prolonged Depression from the eruption of 1929 into the beginnings of war-production mobilization of 1940. (True, war production began in 1938, but it did not surface publicly as a large-scale commitment until 1940.) Out of the shambles of the Depression of the 1930s, by 1943 we had mobilized a production boom that seemingly wouldn't quit. Did that experience not prove that if we had promoted a capital-goods boom during any point in the Depression, we could have recovered our

levels of economic activity just as surely as we recovered through a war-production goods boom? Not only recovery, but without the inflationary effects inherent in high ratios of military goods production!

Depressions are unnecessary, they are the outcome of clinging obsessively to monetary and fiscal policies which cause repeated depressions; they are the outcome of being unwilling to recognize that a depression, or the threat of such a depression, merely shows that the monetary and fiscal policies being used have failed, are incompetent. A depression such as that of the 1930s proves that British political economy is wrong, just as the war-production boom proved, on the heels of the Depression, that the "dirigist" approach of the American System is the approach which must be adopted once again.

As long as a nation has the ability to produce food, it is not obliged to go hungry. As long as a nation can produce clothing, housing, it need not tolerate homelessness and raggedness among any part of its people. As long as a nation promotes scientific and technological progress, and promotes job-creating investments employing technological improvements, its national productivity, the value of its currency, and the means to liquidate its debts must increase. We need but arrange our nation's monetary, credit and investment-fostering policies to give decisive advantage to

those kinds of enterprises which will make us once again powerful and prosperous.

It was undoubtedly the combination of that background and experience, set in a context of profound contempt for Deweyite pragmatism and other expressions of British-style liberalism (British philosophical radicalism), which prompted this author both to reject as inherently wrong those varieties of economic thinking and scientific method which coincided with British philosophy, and to seek a basis for policy-determination outside the hegemonic British-oriented currents of our national intellectual life.

The solution to the problem of political economy was found, beginning 1952, in applying the implications of Bernhard Riemann's 1854 "On The Hypotheses Which Underlie Geometry" to the problem of discovering a deterministic solution to projecting the effects of technological progress on the productivity of the U.S. economy. At this point, one should reflect back to the discussion of Leibniz and the Carnot school given summarily earlier in this chapter. Essentially, the approach to political economy offered by this author and his immediate associates involves a crucial breakthrough of qualitative improvement in the American System of Hamilton, the Careys, and List. However, despite the improvement so effected, the author's work is a continuation of the American System, and is also an extension of the philosoph-

ical outlook from which the American System was originally developed.

The Scientific Issue

During the 1820s and 1830s, leading British scientific circles allied with Babbage, and centered around Edinburgh and Cambridge universities, warned that British science was not only qualitatively inferior to science in the United States (for example, Joseph Henry) and on the continent of Europe, but that there were scarcely professionals available in England qualified to explain the recent accomplishments of leading scientists of the United States and the European continent.

This warning led into the formation of the British Association for Advancement of Science (BAAS), and to energetic efforts by certain Cambridge-centered British circles to plagiarize the principal accomplishments of Americans such as Joseph Henry and the European centers such as Paris, Göttingen, and Petrograd. However, the British were determined that in plagiarizing Continental science they were not going to give recognition to the anti-Newtonian scientific method underlying the accomplishments of the leading Continental scientists.

The centerpiece of British plagiarism was the output of a talented worker, James Clerk Maxwell. The centerpiece of Maxwell's effort was the attempt to give systematic mathematical interpreta-

tion of the work which Michael Faraday had plagiarized from the American scientist Joseph Henry. In the effort to make his own constructions ostensibly competitive with European Continental work, Maxwell plagiarized extensively from earlier work done by Riemann. This plagiarism of Riemann and related circles had two special features. As Maxwell emphasized in a letter, he had been careful to avoid giving credence to "any geometries but our own," and had vulgarized crucial features of the work done by Riemann et al.

The fundamental differences between the paradox-ridden schemas of Maxwellian physics and the physics of Bernhard Riemann are identical in form and conception to the differences between the "systems philosophy economics" of Cambridge University or the Wharton School today and the American System political economy represented by the author. Hence, even though some readers may fear this interpolation threatens to "go over their heads" a bit, the issue should be identified here.

The issue between Riemann and Maxwell is identical at root to the issue between Philo and the Christian Apostles, on the one side, and the Aristotelians of that time, on the other.

The Aristotelians insisted that the universe was created in a sort of "big bang." All the matter and lawful relations of interaction in the universe were presumed to have been made in a "big bang."

Hence, it was argued, all knowledge concerning the universe could be reduced to the kind of metaphysics and logic associated with the Aristotelian school.

Philo and the Christians denounced Aristotelianism more or less as vigorously as they denounced irrationalist varieties of cultism (for example, ancient forerunners of contemporary existentialist structuralism, and “environmentalism”). The universe is necessarily determined by a higher-order of self-acting creative principle, which principle is the cause in the universe, and which principle is reflected as causality in the coming-into-being of the existence of determinate objects and the relations among such objects and processes. The anti-Aristotelian view is known as the Neoplatonic standpoint of Apostolic Christianity, the Judaism of Philo of Alexandria, and those authentic currents of Islam which have no connection to the “Islamic fundamentalism” of such evil cultists as Ayatollah Ruhollah Khomeini today.

The difference between the Neoplatonics and Aristotelians in theological cosmogony has a direct and precise practical implication in physics. The idea of physical space proposed by neo-Aristotelians such as Maxwell or the “systems philosophy” cultists is not the same physical space defined by Riemannian physics. Granted Albert Einstein and Hermann Weyl made a kind of effort to reconcile

Maxwell’s and Riemann’s physics, but Einstein’s and Weyl’s efforts failed precisely because they committed the fundamental error of so confusing the two.

This difference among two factions of physicists is not some interminably debatable difference of “interpretation” of empirical evidence. Crucial experimental evidence proves that the Riemannian conception of physical space is necessarily correct and that the neo-Aristotelian, Maxwellian, or “systems philosophy” approach is absurd. For example, the reality of isentropic compression in a thermonuclear reaction’s triggering is exemplary of crucial experimental evidence that Riemann’s notion of physical space is correct and Maxwell’s flat wrong.

The crossover to political economy is direct. The contemporary versions of the British System of political economy converge upon the kinds of “econometric model-making” associated with “systems philosophy.” The “model-making” of the Wharton School is exemplary. Our nation’s use of an incompetent method of national-income accounting, the so-called GNP system, is an illustration both of that approach and of the disastrous errors in policy-making to which such an approach must lead. Another word for such “systems philosophy” approaches is “equilibrium models.” All of the technology employed in such worse-than-useless approaches is modeled upon the neo-Aris-

totelian dogmas compatible with Maxwell's plagiaristic version of physical space.

Riemann's physics defines the universe as a self-expanding collection of "nested manifolds" or "phase spaces." The physical sub-spaces so defined are set off from one another in a definite way. The apparent characteristic principle of interaction peculiar to that empirical array is different than the characteristic principle of interaction of different sub-spaces. Yet, although existence in one sub-space cannot be determined from the standpoint of the characteristics of another sub-space, all of the sub-spaces interact efficiently. Thus, *determination* in the usual mathematical-physics sense of the term is not preserved across the borders of subspaces, but *causality* is.³

Similar effects occur in economies under the influence of technological development.

To map an economy one can usefully list industries and groups of industries by variety, and then trace the flow of inputs and outputs from one industry to another in the process of reaching the final consumed product. The input-output tables so constructed can be interpreted as a kind of mathematical matrix.

As long as the patterns of input-output flow

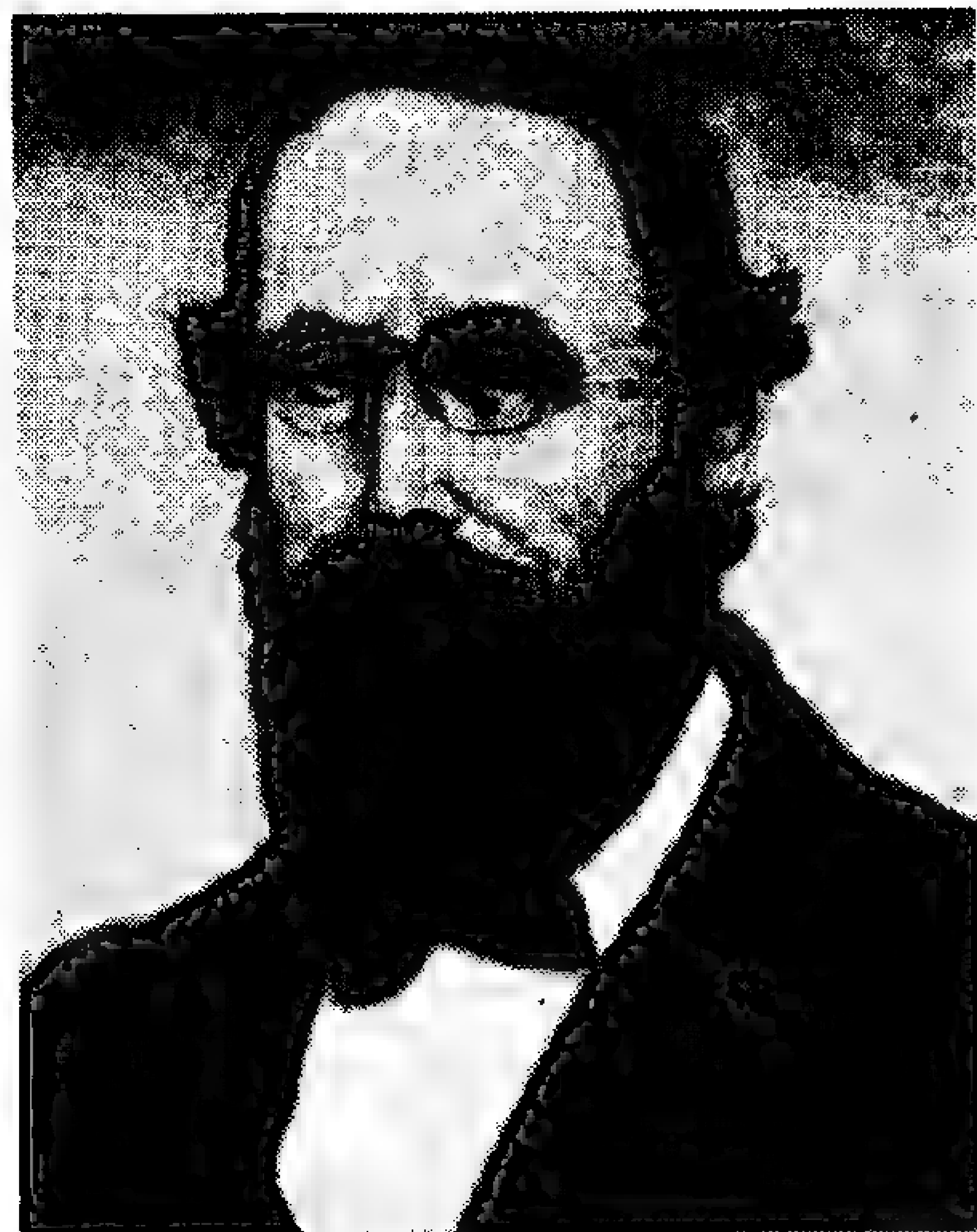
3. Steven Bardwell, "Solving the Three-Body Problem," *Fusion*, 1:21-38; Bernhard Riemann, Habilitation Paper, 1854, in *Collected Works*, ed. H. Weber, pp. 254-269.



*The Humanist
Tradition of
Continental
Science:
Johannes Kepler*



Lazare Carnot

*Gaspard Monge**Bernhard Riemann*

remain the same “geometrically,” even under conditions of changes in the coefficients of such flows among cells, the matrix has not been altered in any characteristic way. However, as industries drop out, new ones are added, and the pathways of input-output flows are altered, we have a new matrix of different characteristics than the old.

Interpreting such effects of technological progress from the vantage-point of physics qua physics, two sources of useful mathematical apparatus are available from an 1859 paper of Riemann’s on shock waves. This paper is key to understanding the problem of isentropic compression in triggering a controlled thermonuclear reaction—fusion. The paper is also an elaboration for application of the principles embodied in Riemann’s 1854 paper “The Hypotheses Which Underlie Geometry.” This same Riemannian approach was used by Erwin Schrödinger to solve the problem of the organization of the electron. Schrödinger’s method leads directly to understanding the way in which new entities, such as “solitons,” are generated in plasma processes, and enables us to properly interpret scattering of accelerated plasmas as hydrodynamic, rather than, erroneously, as massed-particle reactions. It is this sort of Riemannian physics which enables us to elaborate the successive transformations of economic matrices, which transformations are in fact the effects of technological progress, the effects which enable econ-

omies to reach higher plateaus of productivity and to break through existing boundaries of relatively finite resources.

By tracing Riemannian physics back through the work of Carnot and Monge's circles into the earlier roots in the work of Leibniz, we expose the close interconnections between the development of the Continental school of physical science and those developments in scientific political economy which run through Leibniz, Hamilton, Chaptal, Ferrier, Dupin, List, and the Careys into the author's own more advanced resurrection of the American System of political economy.

Britain Versus America

Britain was the avowed military adversary of the United States from 1775 through 1863, and remains the principal adversary *in fact* of United States' vital interests to the present date. The nature of that continuing, *de facto* adversary relationship between the United States and Britain is exposed quite efficiently by focusing on the essential points of difference between the American and British systems of political economy.

Carey and others described the British System as a mixed feudal-capitalist economy, with the feudal-minded aristocracy the governing element in that mixture. One might rightly quibble with Carey's use of the term "feudal" according to the mythology popularized by Sir Walter Scott. What

Carey clearly meant to communicate by that formulation is indisputable in fact.

The key to the "feudal" character of the British System is the British doctrine of "free trade."

In the American System, as with the Tudors and with Colbert, it is our policy to provide regulation and protection to ensure fair profits and fair wages for those capitalists and wage-earners whose labor is contributing to national prosperity and productivity—to the realization of the development of greater productive powers for labor. A recent *New York Times* issue contained a useful observation—itsself a most unusual bit of behavior by the *New York Times*. In an otherwise monstrously wrong-headed statement of editorial policy, the *Times* referred to Japan's practice of allowing "sunset" industries to die while protecting and fostering "sunrise" industries; to let old, unproductive forms of enterprise wink out of existence while fostering new, higher-technology developments contributing to a more prosperous and productive nation for tomorrow. Ensuring fair profits for "sunrise" industries is the essence of the protectionism built into the American System. Ensuring fair wages, so that the potential productivity of our labor-force might be constantly enhanced through aid of rising living standards, is also a vital policy of the American System.

The meaning of the "free trade" issue was made clear enough in our national political experience

leading into the Civil War. The most vociferous defenders of "free trade" were the proslavery forces and those Anglo-Americans reaping large profits from the trade in slave-produced cotton. Similarly, Frederick Engels's corrupting influence on Karl Marx, "brainwashing" Marx into writing a vile, fraudulent denunciation of Friedrich List, and "brainwashing" Marx into admiring British System economists such as Petty, Smith, and Ricardo, is by no means unrelated to Engels's generous income—while his "friend," the brainwashed Marx was starving—from the cotton trade, at the expense of American black slaves and the American economy as well.

The Southern slave-owning class of pre-Civil War times, estimated to be about 250,000 individual members of slave-owning families at the outbreak of war, was a monstrosity evil, oligarchical social class, tied in every imaginable way—in lack of morals, in philosophy, and so on—to the pederasty-reeking British aristocracy. That slave-owning class was an "asset" of British foreign policy, just as the Confederacy itself was nothing but a London-controlled puppet of the British aristocracy and City of London financial interests.

The rise of that treasonous, oligarchical class in the United States should be advantageously studied from the vantage-point of the corruption of Thomas Jefferson.

Jefferson is defined by his own correspondence as a close collaborator of Shaftesbury and of the key executive of the British Secret Intelligence Service of that time, Lord Shelburne's protégé Jeremy Bentham. This was the side of Jefferson which led him to connive at spreading the British subversive operation, known as the "Jacobin clubs," and to verge near to outright treason in connection with insurrections against the United States.

Jefferson is often mistakenly defined as on the side of the antislavery forces. In fact, Jefferson argued strenuously that black Americans were a subhuman species; his affection toward black Americans was akin to the variety one shows toward the humane treatment of cattle. His association with the traitor Aaron Burr and the strong influence of British agent Albert Gallatin on his anti-American System policies and destruction of U.S. military capabilities are indicative.

The practice of slavery transformed Southern planters into a corrupt, treasonous oligarchical class, which was increasingly determined to transform the United States into a backward semi-colony of Britain, if not an outright colony.

The development of the cotton gin promoted this, as is well known even in otherwise dishonest or incompetent texts on American history.

The thrust was to make the United States a

deindustrialized exporter of raw materials and plantation agricultural products, and to be a dumping ground for subsidized masses of cheap British manufactures.

American consciousness of this is elaborated by Mathew Carey in an 1819 attack on "free trade" as the direct cause for the preceding depression of the United States' economy.⁴

The trick was to use competition to drive the prices of manufactures so low that American industries collapsed below breakeven points, or, at least offered such low rates of return on investment that there would be a corresponding deterrence of flow of credit and savings into such enterprises. We Americans fought this, demanding tariff protection for our "sunrise" industries, not to gouge ourselves with higher prices for goods, but to maintain price levels at which the economy and employment would increase—and the total level of real, per capita consumption (real wages) would also grow.

The treasonous gang of slave-owners did not wish to foster the growth of an industrial-capitalist power in the United States; they proposed "free trade" not only for the apparent advantage of

4. Mathew Carey, Addresses of the Philadelphia Society for the Promotion of National Industry, 1819, in Salisbury, *The Civil War and The American System*, pp. 375-442.

being a dumping ground for the cheap manufactures of British "economic warfare" policies. Their motivation was not merely greed, but was wittingly treasonous. They sought to weaken the United States to the advantage of Britain.

True, a lot of people today are hoodwinked into supporting Senator Kennedy's and the Heritage Foundation's treasonous "free competition" and "deregulation" nonsense, swallowing out of ignorance and thoughtlessness the specious argument that such competitive reductions in prices must mean cheaper goods and so forth. The fact that misguided people are hoodwinked into paying higher prices for used-car "lemons" does not make those rolling wrecks a "good buy." Opinion does not define truth; rather, the person whose opinion is not defined by truth becomes unfit to judge his own affairs.

Cheaper goods are properly the outcome of rises in productivity of labor. This productivity arises ultimately from basic scientific advances and the spectrum of improved technologies to which such scientific progress leads. This potential is realized by compulsory public and higher education, and by those improvements in leisure and general conditions of household and community life which impart the capability of assimilating advances in culture of a people. The combined potential so represented is realized by employing such a developing labor-force in productive occupations,

which involve technological improvements incorporated into plant, equipment, machinery, and so forth—with capital formation.

The higher the rate of capital formation, the more rapid the advances in technology and productivity. Hence, the more rapidly goods are made cheaper in terms of the average social effort required to produce them. So, profits and wages rise simultaneously. That is the way we cheapen the cost of living, improve wages, bring more and better goods into the range of an average week's wage.

3

BASIC ECONOMICS AS SUCH

When we use the modern conceptions of political economy, or “national economy,” to compare all phases of development of civilization to date, we reach a conception of a larger-than-political-economy “economics.” This conception is perhaps best described as *a study of the means by which societies reproduce themselves through production of the material means essential to human existence.*

This implies that we take the entirety of a human population of a society as the equivalent to the number “1.” This “1” identifies the total force available to produce the means of existence of the whole society, that whole society itself.

By obvious and appropriate methods of examination of a society, we identify those portions of the whole population, the fraction “1,” which corresponds to what we call nowadays a “labor-force”—the entire “labor-force” of the entire pop-

ulation of that society. We subtract juveniles; we subtract those occupied in raising children; we subtract those who by virtue of illness, advanced age, and social custom, are not considered available for productive labor.

So far, those steps ought to be self-evident to mere common sense. We now enter into matters in which some disputes may arise.

We now treat the entirety of the labor-force also as equivalent to number "1." This "1" is not the same "1" we assigned to the first "1" (population as a whole). It is the whole labor-force ("1") which corresponds to the entire population (also "1") for that society and that society's present culture. Hence, "correspondence" between the two values.

This correspondence is more than abstract, formal. It is a *practical* correspondence. The existence of the entire population ("1") depends upon consumption of the product made possible by productive activities of the labor-force ("1"). Conversely, it is that aspect of the activity of the labor-force which yields the material consumption of the population, necessary to that population's existence as a whole, which becomes our rigorous definition of "productive."

Examining such production more closely, and using the relatively advanced standpoint developed under modern political economies, we have the following qualifying observations.

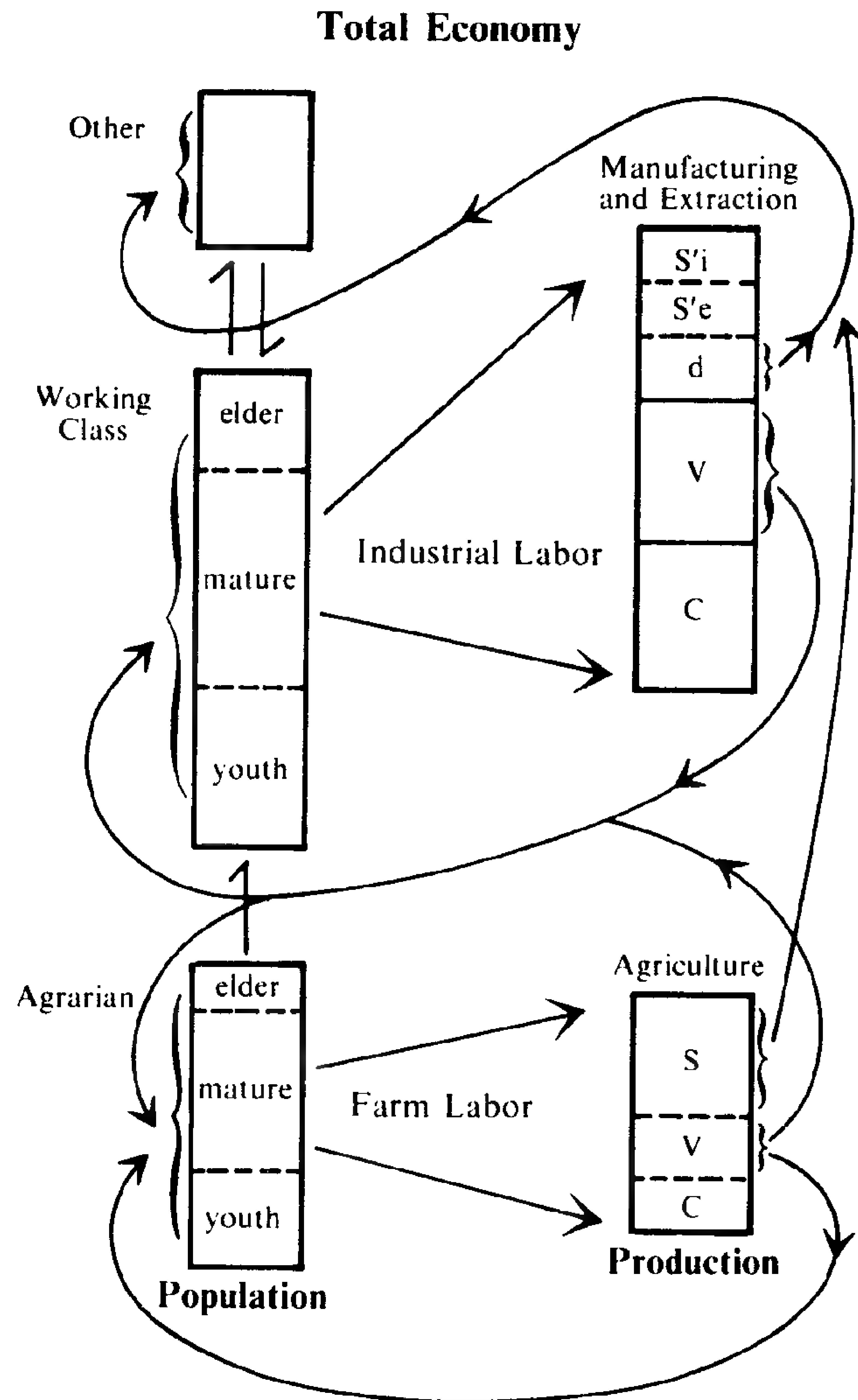
The whole cycle of production of essential con-

sumer commodities has two principal features. One is the production of the ostensible end-product, tangible consumer goods essential to maintaining the population. The other is the development of "artificial labor," or what we term casually today "capital goods." It is the latter which determines the productivity of the labor-force in the production of consumer goods, and hence the standard of living of the population. Thus, both the labor which produces "tangible goods" for production of other "capital goods" or as capital goods of consumer-goods production, is considered productive, together with consumer-goods production proper.

It is those two aspects of production, and only those two, which are meaningfully defined as productive activity by the labor-force as a whole. Conversely, *any other form of activity by the labor-force as a whole is "nonproductive."*

"Nonproductive" does not necessarily mean "not necessary." Take teachers, for example. Without modern compulsory public education, plus advanced scientific and engineering education, our labor-force would not have the mental potential for modern forms of production. Without medical practice, and related matters of public health, the productive potentials of our labor-force would be curtailed. And so forth and so on for all forms of "necessary services," including most emphatically scientific progress and related activities. A similar,

Figure 3



if different sort of argument is to be made for necessary forms of public and private “administrative” activities.

The economic category, “nonproductive,” includes necessary services and administration as well as including unnecessary services, excessive administration, and sheer waste.

That outline of basic categories of economic analysis can be summed up usefully by *Figure 3*.

The population as a whole is apportioned into households whose real incomes are associated with either “productive” or “nonproductive” activities of those members of the whole labor-force who are modally the income-earners of those households. It is the section of the population—a fraction of “1”—reflected in productive elements of the labor-force as a whole which is our primary point of focus in studying the economy.

The section of the population as a whole associated with the whole productive component of the labor-force yields a labor-force which has a value “1” with respect to production as a whole.

We then shift the focus of our attention to the productive activities represented by the productive elements of the labor-force as a whole.

This we analyze as follows:

The production of “artificial labor” we designate by the sector of the bar labeled “C.” The real-income of the whole section of the population associated with the productive elements as a whole of the labor-force we designate as “V.”

This leaves a residue, over and above maintaining the productive labor-force and “artificial labor” at their present levels of quantity and quality. This residue is designated as “social surplus” or “S.”

From that “social surplus,” a significant part is allotted to the household and capital goods-like consumption of the nonproductive elements of the labor-force and associated households. Since this is a subsidiary element of “S,” we employ a lower-case letter as its symbolic representation, choosing “d”—from the Greek “delta”—to identify that component.

Since economic growth and technological progress are the determining metrics of any economy, it is the residual “social surplus,” S' ($S - d = S'$), which occupies our attention. It is the ratio of $S'/(C+V)$ which emerges as the metric of reference for analyzing economies of all sorts.

Interpreted Thermodynamically

One of the important features of the author's breakthrough in economic science was his success in analyzing the foregoing schema, including the ratio $S'/(C+V)$, *thermodynamically*.

In the most commonplace usages, “thermodynamics” signifies studying a process from the standpoint of its energy-throughputs. That commonplace usage is not essentially wrong, but is at fault only in the sense that it involves a naive idea

of “energy.” The author means by “thermodynamics,” a notion of physics in agreement with Bernhard Riemann's 1854 dissertation, “On The Hypotheses Which Underlie Geometry,” and the subsequent understanding of all the principal features of Riemannian physics from that standpoint of reference. However, it is admissible to begin by adapting to the commonplace notion of what “energy” represents.

First, let us ask ourselves why it is necessary to use “energy” as a measure of the “variables” in the ratio $S'/(C+V)$, rather than David Ricardo's notion of labor-time, or related notions to Ricardo's used by Karl Marx, or similar valuations used by many modern branches of the King's College (Cambridge University) “school” of “systems analysis”?

Labor of different cultures is of different quality in its productive potentials. In comparing modern national economies, similarly encultured urban labor-forces have greater or lesser productivity, in proportion to the capital-intensity of production. Therefore, the “historical” labor-content of production, in the sense of historical-accounting practices, is worse than useless in comparing different national economies, or in assessing the effects of technological progress on advancements of productivity in a national economy. We need a different measure.

“Energy,” properly interpreted, provides the

required measurement. We measure the energy-intensity of per capita cultural existence of the population which produces the labor-force, and also the energy-intensity of "artificial labor." We also measure the energy-intensity of the ways in which the net surplus (S') is reinvested by society as expansion and improvements in production.

Obviously, we do not mean simply pouring more energy into a society per capita—otherwise, we could imagine improving a people's productivity by cooking them, a proposition we leave to such lunatics as the cannibals of the Club of Rome. It is the way in which energy's use is *organized* which is crucial here; however, this does require an absolute increase in the amount of energy represented by household consumption and "artificial labor" of production. So, we can begin by imagining that the increase in usefully organized energy corresponds to what we identify simply as increased energy throughputs for household and production consumption.

The most direct expression of such increases in energy-density of production in modern political economies is given by the ratio C/V . This signifies a rise in the ratio of "artificial labor" to "productive operatives" for the condition that both are measured in energy-density, and that the energy-density of V is rising absolutely at the same time that the ratio C/V is rising *for the economy as a whole*. The rise in the value of the ratio $S'/(C+V)$ under the conditions in which C/V so rises is the

definition of a rise in national productivity. This can occur only under the condition that C/V is rising as indicated.

When the ratio $S'/(C+V)$ is so interpreted, appropriate mathematical procedures treating rises in the value of that ratio as invariant enable us to achieve a competent "mathematical economics." The only mathematical approach which satisfies that requirement is the mathematical physics embedded, in its most concentrated expression to date, in the 1854 paper of Bernhard Riemann. As we indicated earlier, one of the relevant outcomes of that 1854 statement was Riemann's 1859 paper discovering "shock waves." This latter paper is the secret of the H-bomb and is the key to the study of what is termed "isentropic compression," the central topic of all present-day frontier investigations in plasma physics. That sort of mathematics enables us to solve the problem of "mathematical economics"; the sort of physics associated with the philosophical tradition running through Isaac Newton and James Clerk Maxwell inherently fails to cope with such problems in either modern physics or economic science.

It is the combining of the author's earlier work in economic science, begun with the breakthrough he made in 1952, with modern Riemannian physics of isentropic compression, which established the new field of "Riemannian economics" as a computer-based economic-analytical tool earlier this year.

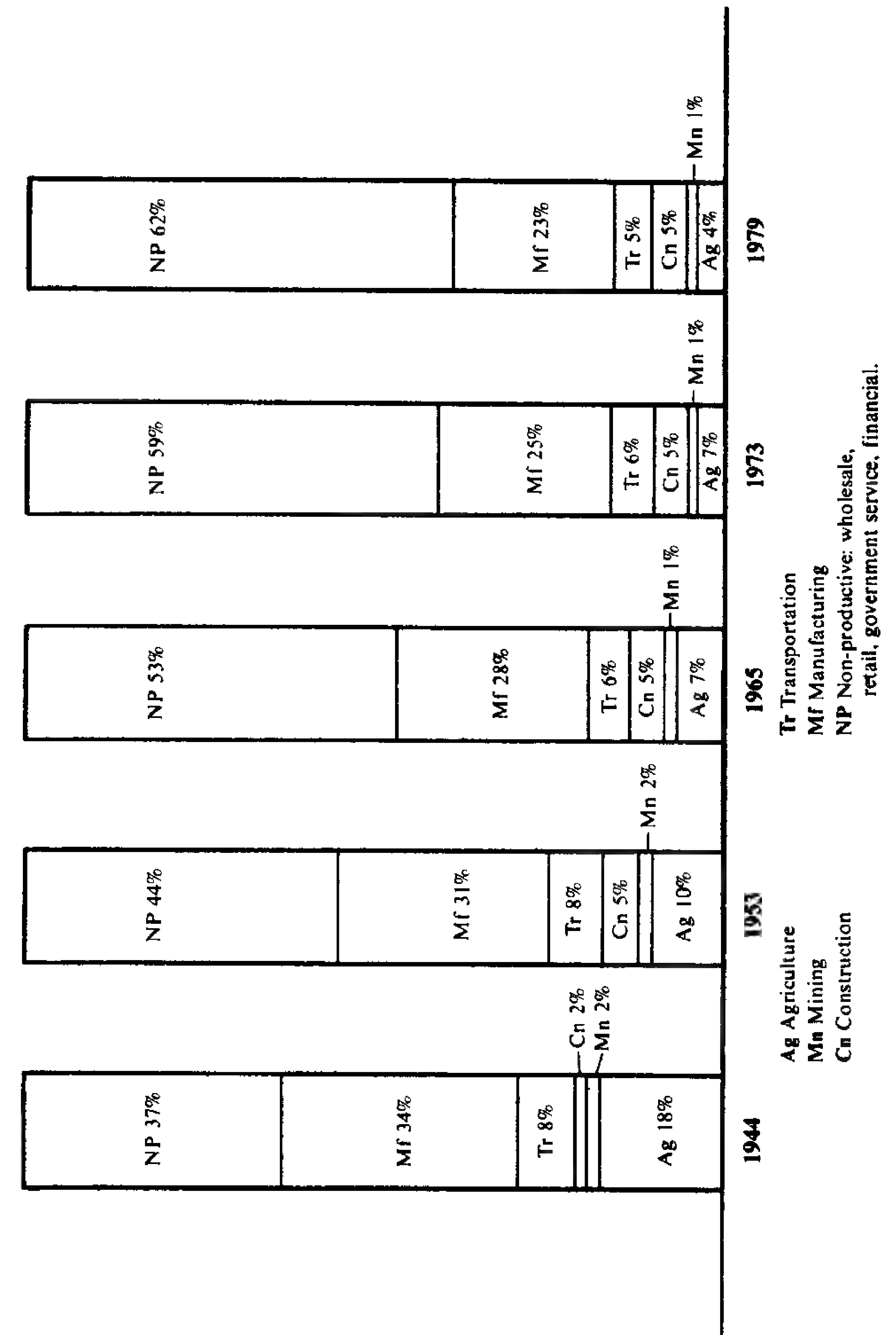
Consequently, we are able to show the direct connection between promotion of nuclear-energy development and such problems as inflation. Without aggressive development of nuclear energy, the rate of inflation must continue to rise. All the measures proposed by the Carter administration or by Republican candidates to date are worse than miserable failures. They are all based on a combination of incompetence in the ABCs of political economy with unwholesome pandering to the votes and pressures of the lunatic antinuclear militants. We not only require more energy for our economy; we require energy in added volumes at higher energy-densities than have been so far conventional. Energy in added amounts at higher energy-densities will be inherently cheaper energy over the medium-term of its development. That sort of energy policy is the bedrock of all competent programs and policies for our national economy and for the world's economy.

Other Determinants of Productivity

A few months ago, the author's campaign organization issued the author's summary statements on *How to Fight Inflation and Unemployment*. Figure 4 is repeated here from that source.

The single most conspicuous cause of the post-war decay of the U.S. economy itself (as distinct from monetary causes) is the growth of the ratio $d/(C+V)$ as shown in Figure 4. There has been a

Figure 4
U.S. employment



monstrously excessive growth in the nonproductive component of the labor-force as a whole. Although this includes necessary forms and amounts of administration and services, both public and private, the overall growth of this component of the labor-force represents economic insanity.

During the 1960s and 1970s this has been aggravated by the adoption of "post-industrial society" policies by both government and large sections of influential, institutionalized policy-making in the private sector. While we have pursued wrong-headed fiscal and monetary policies, causing underinvestment in creation of high-technology productive employment, we have, as a nation, responded to the unemployment and marginal employment so fostered by creating nonproductive employment, partly in a deliberately, politically motivated effort to cover up the monstrous waste being caused by wrong-headed fiscal and monetary policies. It was as if to say, "See, we are beating unemployment and holding down welfare rolls" by such make-work tendencies. Those who were fooled by such confidence man-type trickery were those who wished to be fooled.

Now, during the late 1970s, the imbecility of the 1960s has gone over to the outright lunacy of proposing legalized casino-gambling and other imitations of Sodom and Gomorrah as the new source of income for states and municipalities suffering losses of employment and tax revenues.

Fiscal and monetary policies of the Federal Reserve System, the major, Manhattan-centered private commercial and investment banks, and a complicit federal government divert credit and investment away from productive activities into nonproductive speculation and the super-profits of legalization of organized-criminal activities. Since there is upwards of \$50 billion of illegal profits from the drug trade alone to be "laundered" through legalized activities within the United States alone, gambling casinos are added to commercial sports investments, shopping centers, and parking lots as among the leading investments of interests closely tied, since the 1920s and 1930s, to organized crime.

Looking at the simple outline we have given so far in this chapter, what is the reality of this "Bread-and-Circuses" policy of those sections of the Democratic and Republican parties whose financial and political power derives largely from the organized-crime activities of the 1920s and 1930s, and from the illegal-drug and related Sodom-and-Gomorrah traffic of the present decades? It is to increase d by contracting $(C+V)$. To contract $C+V$ is to contract S' proportionately, at least. To increase d under these conditions is to proceed toward absorbing nearly all of S into d , reducing S to below 0. How could such approaches to increasing tax revenues and employment fight inflation or lower taxes? Simply, they have exactly the opposite effect—an effect not unlike that of

similar measures on the obscenity known as the Roman Empire.

What is the effect of shifting away from relatively higher energy-density coal and petroleum to "wood chips" and low-head hydroelectric dams for New Hampshire? One knows that some of those persons proposing these latter programs for New Hampshire are tied, either politically, financially, or both, to the same gang proposing opening up a Sodom and Gomorrah of legalized gambling in the White Mountains region. One strongly suspects that such connections are even more extensive. The economic effects of shifting to low energy-density, economically counterproductive "wood chips" and low-head hydroelectric power are absolutely clear: it would plunge the New Hampshire state economy back toward a "new dark ages."

Looking at the point from the point of reference of the individual member of the labor-force, we have this picture.

In general, increased potential productivity of a member of the labor-force involves a higher standard of living over persons of lesser potential. The requirement of more and better education is one aspect of this. The advancement of the cultural level of the individual requires increased leisure—provided the individual employs that productively for his or her own development. It requires labor-saving devices in the home, less time wasted in

commuting, and so forth. These costs are expressed as a higher energy-content for the average value of V . That is the same thing as saying that the average cost of living, the average real wage, must rise by comparison with the content of the purchasing-power of an average real wage in a preceding period of lower potential productivity.

To realize this potential productivity of the member of the labor-force as higher productivity in terms of actual output, the amount of social surplus produced by the average productive operative must rise twofoldly. It must rise by the amount of the increase in real wages if we are merely to keep the ratio S/V , the raw measure of productivity of labor, constant. Since the ratio C/V must rise, the ratio S/V must rise after increases in real wages merely to keep the critical ratio $S/(C+V)$ constant. Furthermore, since necessary ratios of administration and services, d/V , must tend to rise with advances in technology, the ultimate critical ratio, $S'/(C+V)$, cannot be maintained unless $S/(C+V)$ increases in value accordingly.

In fact, if society is to overcome the apparent resource-limits of any existing general level of technology of production, the ratio $S'/(C+V)$ must rise, as a matter of long-term trends.

Reduced to its energy equivalents, the ratio $S'/(C+V)$ is bounded in nature by the required increases in effective "reducing power" of societies.

By “reducing power” one means more narrowly the relative temperature required to transform a raw material, such as ore, into a usable form for society. This cost of reduction of ores, and analogous needs, must be kept within the bounds of such values of C as coincide with rising values for $S'/(C+V)$. The growth of $S'/(C+V)$ means therefore a growth in the level of the effective energy-potential of society’s productive technology at rates equal to or above the rates required to provide for the continued, economical “reduction” of raw material in such a way as to supersede any ostensible limits to natural resources.

The minimal values for $S'/(C+V)$ so determined describe a “curve-trajectory” in the phase-space of economic growth. These minimal values represent a “world-line” below which society’s effective progress must not fall.

The *realized scientific progress* which is in correspondence with such a minimal value is properly the principal economic-policy determinant for a political economy.

Let us compare this with Alexander Hamilton’s proof given in his 1791 *Report to the Congress on the Subject of Manufactures*. By developing the labor-force, as through advances in the quality of compulsory public education, we bring that labor-force to the level needed for its employment of new technologies derived from basic scientific progress. By employing such a labor-force in the use of “artificial labor” premised on the same

technologies, we realize the potential improvements in the productive powers of labor effected through imparting scientific and technological progress to individuals by such means as education and related cultural programs.

That Hamiltonian principle is the fundamental premise of the American System of political economy. It is to the extent we have followed that principle in practice that our nation achieved its former greatness.

Therefore, the starting point for national economic policy is the determination of the required rate of basic scientific progress. That rate is determinable as the advancement in the negentropic potentials of scientific practice which corresponds at minimum to the required minimal value of increases in the energy-determined ratio $S'/(C+V)$. This has a precise potential expression in terms of Riemannian physics. That is, we can now determine, with aid of Riemannian physics, what particular kinds of breakthroughs in basic scientific knowledge we require to achieve minimally required rates of advancement in technology and productivity over the coming period.

For example, the problem of cracking now the mysteries of isentropic compression in a controlled thermonuclear reaction exemplifies the breakthroughs in negentropy of basic scientific knowledge needed to meet the requirements of the late 1990s and early 2000s.

We shape that into an economic policy in the following exemplary ways.

1. It is the duty of the President of the United States to organize the community of scientists as a consultative body, to inform him of the spectrum of breakthroughs in sight. This is not a law-making function of the President, but a leadership function of the presidency, to catalyze the emergence of a national scientific consensus concerning national development goals.

2. Out of this process, the President must devise project-orientations akin to the wartime Manhattan Project and NASA, catalyzing the coming-together of individuals, private firms, and government around well-defined task-orientations which are deemed best representative of the required scientific breakthroughs. Except for the case of agriculture, this is best done today under the auspices of the Department of Commerce, aided by incorporating an expanded NASA with broadened titles of responsibility into that function of the Department of Commerce.

3. The President and the Congress must devise fiscal and monetary programs which provide adequate incentives for research and development and investment in connection with basic improvements in science and technology. A clear definition of the

distinct tasks of government and the private sector must be established, leading to a "privatization" of the entire project into the private sector, in each case, recycling governmental funds for new undertakings of the same sort.

4. The establishment of a scientific consensus of leading scientists in such matters causes a promotion of related approaches in the universities and public school system, aided by conferences and by science and technology fairs which bring new technologies within appropriate reach of both the professional and lay communities.

This should be qualified here. How do we see the roles of government and private industry in such undertakings?

Contrary to mythologies, capitalism was not created as a result of the growing influence of private capitalists in shaping the policies of governments. Directly the opposite is the truth. The Tudors developed the royal patent as an instrument for giving innovators and their associates special privileges for producing and marketing useful innovations. *It was the state which created the capitalists, not the individual capitalist who shaped the creation of the modern state.*

The reason that decision was made is crucial in the present context. Why did not the state choose,

instead, to launch all innovations as state industries, rather than fostering private industries?

The reason is fundamental, and relevant to today.

Although scientific and related progress must be the policy of the government, government cannot replace the role of the individual creative mind in making discoveries, inventions, and in fighting through the successful realization of those discoveries. The state must give leadership and incentive to the process of scientific discovery and economic development, in such a way as to produce a climate in which individual initiative flourishes.

In this modern age, small-minded persons besiege us more or less interminably with proposed new amendments to our Constitution, and new pieces of legislation. So, we are oppressed by an excess of government, a tangle of what are largely useless or counterproductive laws, a monstrous bureaucracy to administer that tangle of statutes—and, worse, the bureaucratic procedures attached after the fact to the administration of statutes. The person who demands a new law is usually a person who retreats from the idea of getting a job done, and, instead, proposes a law which he presumes will order society to do this or that thing.

Competent leadership does not encumber society with such a tangle of statutes. Competent leadership rallies a nation to undertake great tasks, and includes only such minimal governmental leg-

islative action as is indispensable to facilitate that accomplishment. *An incompetent leader rules by passing edicts and laws*; a capable leader relies on a maximum of inspiration of the population, and a relative minimum of law.

When we speak of government's leading role in the matter of promoting scientific and technological progress, let it be understood in that light. The best things the federal government has done in recent decades are the Manhattan Project and NASA's work. As we create the accomplishments of such concerted efforts, we properly sell the products of that endeavor to private investors, and use the proceeds of the sale to fund new endeavors whose products are sold off in like manner. Japan's greatest successes in economic development have been accomplished in that way.

In summary of the preceding points:

The source of all wealth of nations is basic scientific progress. This progress, subsuming advances in technology, is transmitted through two channels. It is transmitted as education and culture to the population as a whole, yielding a more potent labor-force. It is transmitted in the form of what Hamilton terms "artificial labor" as capital goods used by productive operatives in production of wealth.

At first glance, the common denominator of all of the relations between man and nature in this process of economic development is *energy*. That

term must be refined. We do not mean "energy" as the simple equivalent of a quantity of heat. We mean "organized energy." The paradigm of such organized energy is given by the summary expression of the social relations of production, $S'/(C+V)$. It is the rise in the value of this expression under rigorously defined conditions which represents the proper notion of organized energy. These required increases in the value of $S'/(C+V)$, so defined, correspond to a process of development we term *negentropy*.

The rigorously defined conditions for determining a rising value of $S'/(C+V)$ are: (1) a rise in the value of V ; (2) a rise in the value of the ratio C/V ; (3) a rise in the ratio d/V and of $d/(C+V)$ in less than direct proportion to the rise in the ratio C/V ; (4) a rising value of $S'/(C+V)$, greater than the minimal required increase in the reducing-power of society.

The equivalence of such expressions, for functions of $S'/(C+V)$, to crucial features of Riemannian physics enables us today to define those areas of potential breakthrough in basic scientific knowledge required to sustain economic growth at adequate levels over the coming period of development.

Next, let us consider some of the commonplace beliefs which miseducated university professors and others distribute among the credulous admirers of such academics.

4

TWO COMMONPLACE CAMPUS IDIOCIES

The early eighteenth-century British were confronted by the powerful influences of Jean-Baptiste Colbert and Leibniz in connection with economic policy, and with related policy-matters such as credit and taxation policies. In response to this, the British East India Company and its friends expended considerable effort in developing and circulating "black propaganda" against Colbert, Leibniz, and others of that view.

The most important piece of lying propaganda developed by the East India Company and its friends was the doctrine of "free trade." Obviously, if both profits and wages could be driven sufficiently low by *the anticapitalist policy of "free trade,"* the aristocrats and their rentier-financier

friends would be able to hold industrial progress back to something approaching a “zero-growth” level. In such a circumstance, the industrial-capitalists would never be able to free themselves from the grip of the City of London-centered financial interests.

The propaganda in favor of this anticapitalist doctrine of “free trade” was actually not developed as a matter of political economy. The argument for “free trade” was based on the central theme of Thomas Hobbes’s defense of absolute autocracy, *Leviathan*. This was the doctrine which described the relations within society as axiomatically an anarchically “competitive” state of “war of each against all.” Hobbes argued in effect that the homicidal consequences of democracy in such a society proved the need for an absolute arbiter, equipped with the arbitrary force to repress the anarchy of the masses.

Hobbes’s pedigree is relevant to understanding that exotic and repulsive doctrine.

Hobbes was the secretary of the notorious pederast and one-time, embezzling Chancellor of the Exchequer to James I of Britain, Sir Francis Bacon. Bacon, whose principal written works are permeated with the outright lies and other frauds one might expect from the pen of a pederastic embezzler, was an agent of the Cecil family—the family into which U.S. Ambassador Joseph P. Kennedy married one of his daughters. The Cecils

of the sixteenth and early seventeenth centuries were agents of the Genoese financier interests, and were politically agents of the Genoa-Geneva-Amsterdam axis of financier power of the European “black nobility,” the pro-oligarchical, anti-capitalist faction of Europe.

The Cecils came to power in late sixteenth-century England through the notorious vacillations of Queen Elizabeth I. These vacillations are the principal theme of Shakespeare’s *Hamlet*, and are taken up again in the *Maria Stuart* of the German historian and playwright Friedrich Schiller. The Cecils’ coup d’état against the republican, procapitalist forces was consolidated during the post-1588 period. The principal pivot of the coup d’état was the pederastic Bacon brothers’ seduction of the boy, Essex, then being groomed by Elizabeth as her prospective heir to the English throne. The Bacons maneuvered the seduced youth into an operation which the Cecils had created, and then exposed Essex’s involvement in the plot. Many of Shakespeare’s teachers and friends, members of the republican, Dudley-centered faction of Giordano Bruno’s friends, were assassinated (for example, Christopher Marlowe) or exiled (for example, John Bull) by Bacon and other Cecil-Genoese agents during the post-1589 period.

In consequence of this 1590s coup d’état within Elizabeth’s government, the succession of James VI of Scotland was secured, he becoming James I

of the kingdom in 1603. Under James I and his son, Charles I, the credit and economy of England were ruined, with Francis Bacon for a time playing the role of a “W. Michael Blumenthal” at the treasury.

The key to the ruining of the English economy and credit was James I’s granting of “tax-farming” privileges to foreign-based private banking interests. The English economy was bled by these bankers into a deep recession, and even a turning-back-of-the-clock on its advancement under the Tudors.

The Cecil family, to which the Kennedys are politically as well as maritally allied, has maintained that same political-philosophical tradition down to the present date of the Devonshires and other leading branches of that family.

Bacon’s participation in this ruin of the English economy is coherent with his fraudulent reputation as a promoter of modern scientific progress. Any university professor or other academic sort of person who proposes that Bacon contributed anything to the progress of science is either an outright liar, or is innocent of lying solely by virtue of incompetence.

All of Bacon’s so-called scientific works were an attack on the leading English scientist of that period, William Gilbert. Gilbert is most famous to the present time as the author of a work, *De Magnete*, which founded the science of electro-

magnetism and which led Johannes Kepler directly to the founding of modern mathematical physics. Among his related achievements, Gilbert discovered the existence of magnetically confinable plasmas, proving the effects of magnetism on the flame of a candle. Gilbert was otherwise something of a universal scientist, like Leibniz later, and had a direct and prominent hand in many ventures, including late sixteenth-century efforts to develop a steam engine. In attacking Gilbert most directly, Bacon was also attacking the method of Kepler, attacking the whole body of advancement of fifteenth- and sixteenth-century scientific thought, an advance centered around the critical study of the revived work of the Platonist Archimedes by such key figures as Cardinal Nicholas of Cusa.

Kepler’s—and Cusa’s—method of rigorous determination of experimental hypothesis is continued directly through Gottfried W. Leibniz, and through such continuers of Leibniz’s “Continental science” faction as the great Euler, the Bernoullis, Monge, the Carnots, and the nineteenth-century Göttingen school. Bacon attacked the core of the method which has produced every basic scientific breakthrough in knowledge since the beginning of the fifteenth century! Bacon was not only a kind of “W. Michael Blumenthal” for James I’s reign; he was also a kind of “James R. Schlesinger.”

Bacon’s policy and practice were not merely to turn back the clock on the economic development

of the English economy; he also worked fiercely to the purpose of attempting to uproot basic scientific progress as well.

As ought to be well-known to any child matriculated from elementary school, by 1640 the United States' English forebears had had more than enough of the policies of Cecil's Stuart monarchies and Genoese-Amsterdam tax-farmers. The English republican, procapitalist forces overthrew the Stuarts, beheaded Charles I for his treasonous crimes against England, and revitalized the English economy, as well as its army and naval power, most considerably, during the period of the Commonwealth and Cromwell's alliance with France's Cardinal Mazarin.

In 1660, aided by treason of Scottish forces, the Genoese financial faction at Amsterdam put Charles Stuart II on the British throne. (Amsterdam had considerable difficulty with the Restoration Stuarts in matters of British foreign policy, chiefly because Jean-Baptiste Colbert and others had a keen eye for the Stuart susceptibility to a French bribe. So, the House of Orange took over Britain directly in the 1688-1689 "Glorious Revolution," and turned Britain over to the House of Hanover, which rules Britain still, after the death of Amsterdam puppet Queen Anne.) In Charles II's train entering London was the successor to Thomas Hobbes, John Locke. It was under Locke, head of the newly created, self-styled "Baconian"

Royal Society, that the British Secret Intelligence Service (SIS) and its partner, the East India Company, developed modern British doctrines of political economy. From the beginning, the adversary adopted by Locke et al. was not only the Tudor tradition of scientific and capitalist development revived by the Commonwealth Party; the more general, adopted adversaries were Jean-Baptiste Colbert and one-time Colbert protégé Gottfried Wilhelm Leibniz.

Any scientist today must face the overwhelming evidence proving conclusively that Isaac Newton and Robert Boyle, Locke's principal protégés of the Royal Society, were perfervid plagiarists, and otherwise frauds. In general, the London Royal Society plagiarized wildly from Paris-centered "Continental science," especially from the work of Colbert protégés Christian Huyghens and Leibniz. The genuine merit involved in effecting such plagiarism was principally the work of a gifted worker, Robert Hooke. Most of the published work for which Newton and Boyle were famed was extensively plagiarized from Hooke's attempt to synthesize the accomplishments of Gilbert, Kepler, Galileo, Huyghens, Leibniz and others into the reductionist schema generally described as "classical mechanics."

In the case of Boyle, some of Boyle's plagiarism was denounced and proven by Hooke during Hooke's own lifetime. Boyle's more extensive pla-

giarism of Hooke's work was done after Hooke's death, when Hooke was no longer alive to protest such frauds.

In the case of Newton, the evidence was also conclusive during Newton's lifetime. The Bernoulis went so far as to summarize these facts in leaflets distributed at their own expense. However, the British contrived to bully the scientific community generally into ignoring that evidence until the present century, when the embarrassing contents of a chest of Newton's papers came to scholarly attention. Newton did no experimental investigations; his laboratory work was entirely devoted to study of *witchcraft*!

British work on political economy was in the same genre as the fraudulent work of the Lockean Royal Society on the physical sciences. The putative author of British political economy was William Petty, a rabid, anti-industrial "physiocrat" (all wealth comes from the land), and the ancestor of the same evil Lord Shelburne who was the United States' chief enemy during the 1780s and 1790s, the latter the controller of British Prime Minister William Pitt the Younger, as well as of the notorious pederast and head of secret intelligence for the British East India Company, Jeremy Bentham.

From Petty, the development of the doctrine that all wealth is essentially the "bounty of nature" was most prominently developed by the French



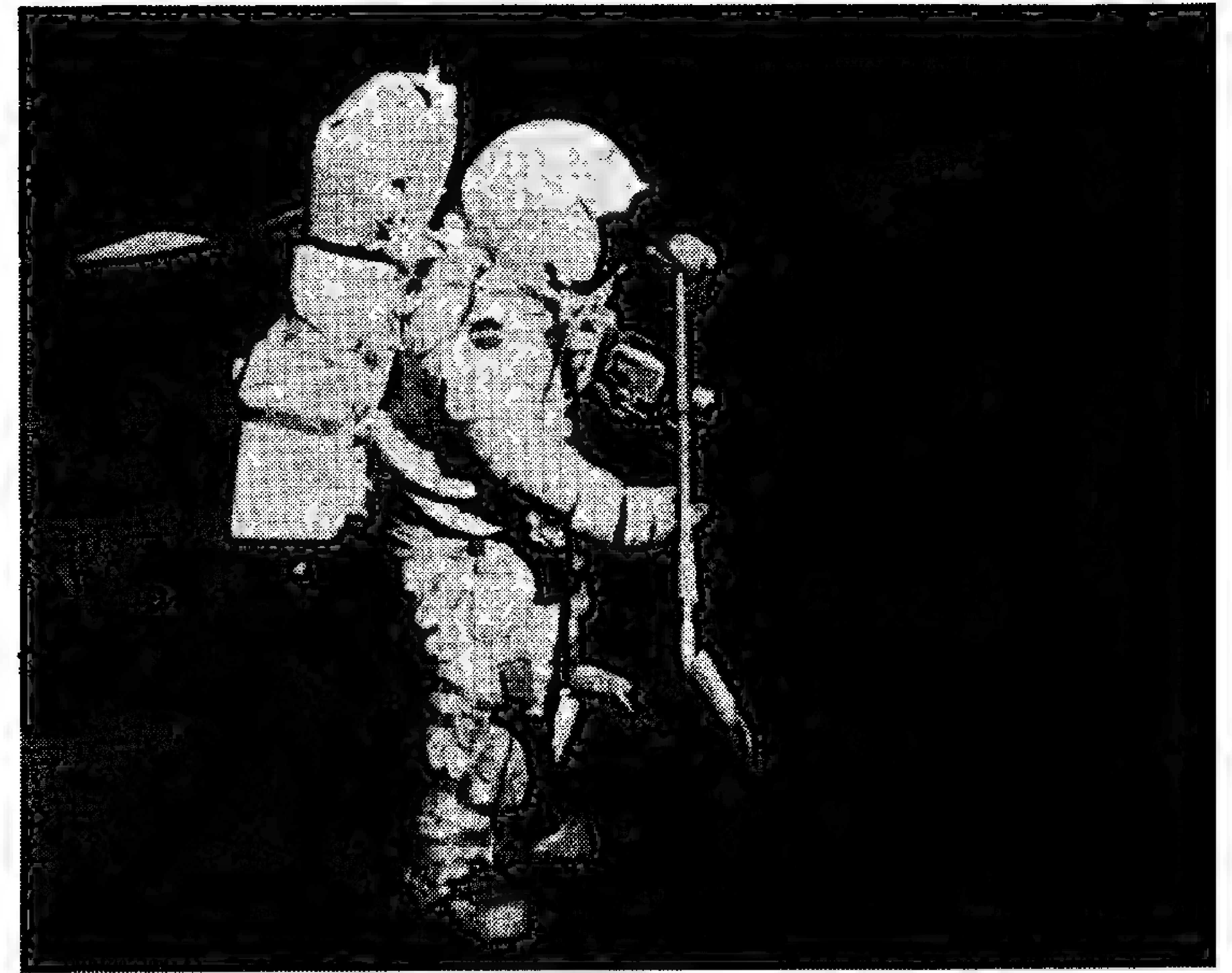
*Ideologues of the
British System:
Francis Bacon*

*Thomas
Hobbes's
Leviathan*

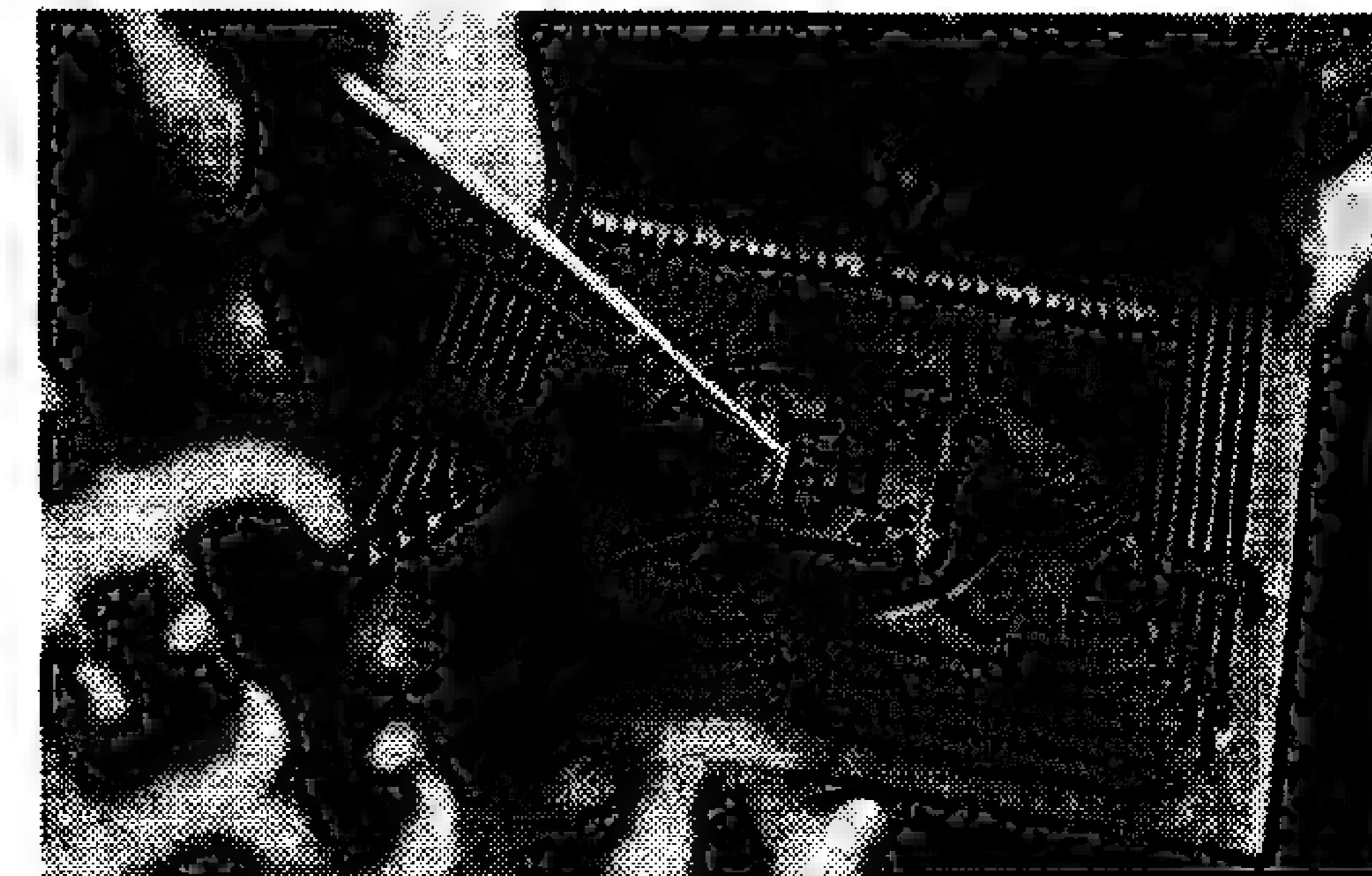




The British System versus the American System: one result of Adam Smith's "invisible hand" was Britain's deliberately caused famines in India like this one in 1877.

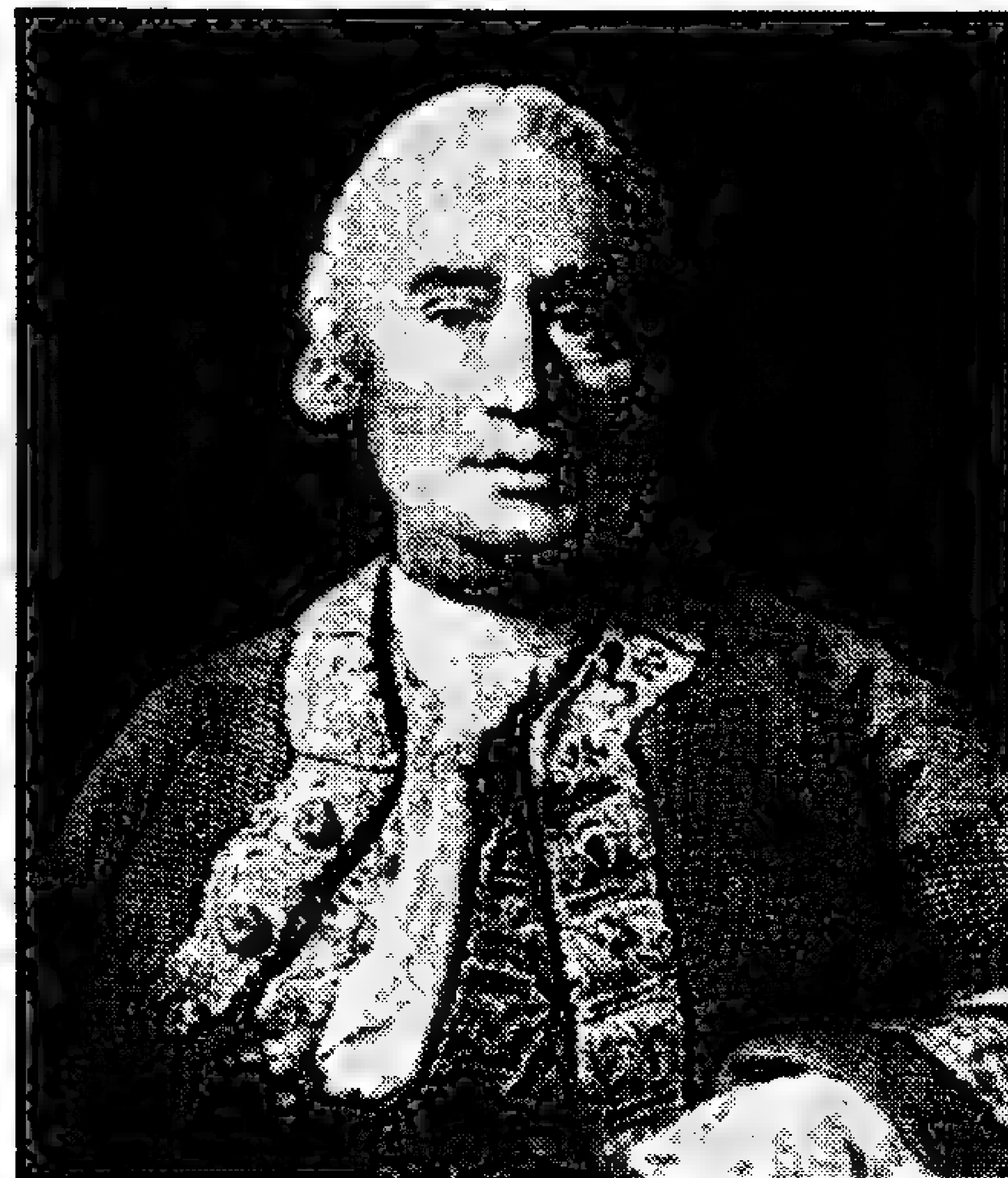


NASA, the government-sponsored space project that put men on the moon, and transformed industry through private enterprise, as shown here with one of NASA's spinoff products, IBM's superconductor.





John Locke



David Hume

Physiocrats, a French aristocratic landowner-interest closely allied to London financiers and the British government, also perfervid enemies of Colbert and Colbertist promotion of scientific and industrial progress. Apart from this eccentric, shamelessly feudalist doctrine, some of the Physiocrats were rabid proponents of the British doctrine of "free trade," helping to give that doctrine its customary French form of expression, *laissez-faire*.

During the eighteenth century, the modern British school of political economy was established as a body of doctrine under the direction of the chief of the Edinburgh division of the British Secret Intelligence Service (SIS), David Hume. The 1776 publication of Adam Smith's *Wealth of Nations* was the outcome of Smith's work as a subordinate of Hume's in SIS, both collaborating closely with the East India Company.

Hume is best known to schoolchildren, of course, as the author of one of the more famous arguments in support of "moral indifferentism" in both scientific inquiries and in the efforts to establish a firm moral law. It was on this ground that Hume's philosophy was justly denounced as immoral by Immanuel Kant, especially in Kant's Preface to the first edition of his *Critique of Pure Reason*. Hume's principal employment throughout his adult life was as a British spy in SIS service. His so-called philosophical writings occurred as

an integral part of his duties as a British SIS "psychological-warfare" functionary.

Hume's most important posting as a British spy was his approximate decade of service under diplomatic cover in France. This intersected the same areas of French and other Continental European life as British agents Montesquieu and Voltaire, and the British Royal Society's leading French project, the French Encyclopedia. This all intersected the same circles as Swiss banker Jacques Necker, the father of the famous British SIS agent, Madame de Staël; Necker himself was the French finance minister who bankrupted Louis XVI on behalf of the Genoa-Geneva-Amsterdam-London financial interests.

For these services, Hume was promoted to head up the Edinburgh division of SIS, in which circumstances Adam Smith came under his direction for both the *Wealth of Nations* hoax-project and their joint work in synthesizing the Ossian cult (which later produced Richard Wagner's role in music-drama and, still somewhat later, Adolf Hitler's youthful indoctrination into the Odin and Thule outgrowths of the original SIS Ossian cult).

That summary material outlines the environment in which the 1776 *Wealth of Nations* hoax was developed.

The next phase in the elaboration of British political economy was developed under the Shelburne-Pitt regime. Again, the tight interface

between SIS and the East India Company (plus Barings' bank) is to be emphasized. The key figures of this phase were Jeremy Bentham's close associate James Mill, and Reverend Thomas Malthus who elaborated a doctrine of the necessity of misery from the starting-point of another despicable sort of priest, Joseph Townsend. David Ricardo is a product of the same general effort, as is the French agent of British influence, J. B. Say, of "Say's Law."

The third phase is associated principally with the work of John Stuart Mill, son of James Mill and godfather of the evil Bertrand Russell. J. S. Mill was the principal ideologue reflected in the creation of the British Fabian Society. J. S. Mill's work, together with that of McCulloch and Marshall, forms the backbone of nineteenth-century British political-economic doctrine.

The fourth phase, the present phase, is centered around King's College, Cambridge University, and the work of the most influential, avowed "neo-Malthusian" of this century to date, John Maynard Keynes.

Before continuing this preliminary summary of British political-economic doctrine's history, a few remarks should be added here concerning King's College.

The principal Cambridge University track into high ranks within SIS is an entity known as the "Apostles." This entity recently entered headlined

newspaper articles around the world in connection with the so-called fourth man of the purported quartet of H. Kim Philby, Guy Burgess, Donald Maclean, and the grey figure lurking in the Queen's art collection, Anthony Blunt. It was emphasized that Blunt had been an Apostle, like such notables as Alfred North Whitehead and Bertrand Russell before him. The Apostles are drawn from selected students of two colleges at Cambridge, Trinity and King's. Trinity is generally associated in the public mind with the physical sciences and related matters. King's, Keynes's old base, as that of Mrs. Joan Robinson, is popularly associated with British political economy.

Cambridge today is the world center for dissemination of two, interrelated kinds of superstition in the name of economic policy. The first is a brand of "neo-Malthusianism" popularly associated with the genocidal proposals of the Club of Rome's *Limits to Growth* hoax, a hoax associated with two fakers based at the Massachusetts Institute of Technology, Dennis Meadows and Jay Forrester. The second, closely overlapped with the first, is known as "systems philosophy."

The neo-Keynesian doctrine of world genocide is otherwise encountered as what is termed "equilibrium economics." Typical of the quacks who preach this doctrine to their credulous students are those self-styled economists who argue the following. They argue that although it appears that

technological progress increases the wealth of society, when one looks at the individual firm or other aspects of the economic "microcosm" in the economy as a whole, technological progress does not increase wealth—in the "macrocosm."

The argument made by these doctrinaires (to the extent one can extract anything resembling rational argument from them), is that the gains one firm makes through technological progress (for example) are offset by matching losses to other parts of the economy as a whole; therefore, that no amount of technological progress could increase the wealth of the economy *as a whole*.

If one confronts such unhappy academics with the evidence of the massive growth in per capita wealth—and also populations—during the period since the fifteenth-century "Golden Renaissance," their argument is that we have presently reached the point at which continuation of such progress has encountered its upper limits. How is this possible? The response to that question is lost somewhere in the mists of superstition, but the gist of the mumbling response we elicit is about the same as that of the fraudulent Meadows-Forrester report, *The Limits to Growth*.

For a more candid presentation of the doctrine, one must address one's attention directly to the leading circles of King's College, not the wooden heads of the American academic dummies which mouth such doctrines second-hand.

The second version of the same doctrine, its other facet, "systems philosophy," is even nastier than the simple "limits to growth" cult-doctrine. "Systems philosophy," the official doctrine of the United Nations' UNITAR organization, is the core of the current "One World" scheme for eliminating sovereign nation-states, in favor of some parody of medieval rule under the dictatorship of institutions such as the International Monetary Fund and the UNO itself.

Although so-called right-wing critics of the UNO have sometimes gone overboard in their interpretation of an inadequate selection of the facts, when those critics announce their suspicions that certain eccentric but powerful persons in Manhattan are conspiring to create a new world order in cooperation with Moscow, they are on the track of the truth.

Beginning about 1965, with prominent roles performed by the UNO and the Ford Foundation, among others, a significant and growing element of Moscow's leading circles was drawn into an international "systems philosophy" project. It was argued that despite the differences between Western capitalist and communist nations, there existed a higher level of reality, embodied in "systems philosophy," under which the two systems could coexist rationally and ultimately converge. Since a large part of the Soviet leadership bought that package, it is that package, "systems philosophy,"

which has been brought forward as the most workable approach to a "One World" takeover during the course of the 1980s.

Naturally, the author, as President of the United States, will tolerate no more such nonsense from the UNO (in particular). Such evil focal points of "One World" cultism as UNITAR, UNESCO, and UNCTAD are activities which the United States will not tolerate intervening into its internal or foreign affairs, and the United States will promptly cease making any financial contribution for the support of such evil forms of medieval kookery. Unfortunately, in the meantime, such exotic lunacies are rampant among our so-called intellectual and policy-making circles.

What we have outlined concerning the first and second phase of the articulation of British political-economic doctrines is in essential agreement with the views of all leading U.S. economists of the eighteenth and nineteenth centuries. As we have indicated in an earlier chapter, these included Benjamin Franklin, Alexander Hamilton, Mathew Carey, Friedrich List, Henry C. Carey, William Elder, and William D. Kelley. The doctrines of Adam Smith, Thomas Malthus, David Ricardo were recognized as all of the same piece, were recognized as an anticapitalist doctrine reflecting the "mixed feudal-industrial" character of the British economy itself. These British economists represented doctrines—then and now—wholly con-

trary to the most vital interests of the United States.

That is as true today as it was before or during the presidency of Abraham Lincoln. Unfortunately, as we also emphasized in an earlier chapter, there is no sign of a competent economist at a leading United States university during this century—except for the limited influence of the author's writings upon such circles. Present-day academic economic teachings in our universities and policy-making circles are slavish imitations of British doctrine. Most of the persons who seek to be praised as knowledgeable in economics by newspapers and such are cautious to attune their views to agreement with the doctrines of leading academic economists.

This creates the climate which inundates common opinion. Almost any literate person sincerely believes in such purported truisms as a "law of supply and demand," for example. There is no such "economic law," in fact. Nonetheless most people imagine that such a law exists, just as people widely believe in the nonexistent "law of averages."

It is bad enough that so many people are brainwashed into believing in a "law of supply and demand." Worse, people will tolerate almost any lunacy in public policy if they are but assured that the policy is consistent with the anticapitalist doctrine of "free enterprise" and the mythical "law of supply and demand."

Let us now apply the basic economics outlined in the preceding chapter to the mythical "law of supply and demand." After we have done that, we shall expose the reader to a more sophisticated use of the same basic economics, to show that the basic premises of "systems philosophy" are as absurd as they are evil in practice.

Supply and Demand

Let us restate the problem of "supply and demand" in an economy in the terms provided in the preceding chapter.

From the standpoint of demand, the total product of that economy is divided into three groupings. These are: *consumer commodities* within the range of current wage-equivalents; *replacement capital goods* or the *equivalent*; plus the additional consumer and capital commodities margin represented by S' , or net surplus-product.

C, the equivalent of replacement capital goods, is absorbed in the current price of sold commodities at levels and in total amounts corresponding to the preceding epoch of the cycle of production and distribution. This involves no problem in general, therefore.

Wage-equivalent is an amount less than the total of $d+V$ —since d includes administrative, service, and nonproductive military and other goods in excess of wage-equivalents subsumed under d . However, that latter discrepancy is absorbed as an overhead cost of the production-distribution cycle,

so no “redistribution” problem is apparent here: supply equals demand.

The categorical problem, if one does in fact exist, is isolated to the amount of S' . This amount S' is the focus of attention of those pseudo-economists who argue that capitalism has an inherent “buy-back” problem. The “buy-back” superstition is to be recognized as simply a variation on the more general superstitious belief in the existence of a “law of supply and demand.”

How does society circulate S' ? To reduce the answer to that question to its most categorical, universalizing form, *S' is circulated through the expansion of credit.*

In general, the problem of modern capitalist economy is not of the form assumed by superstitious belief in a “law of supply and demand.” The problem of circulation of “supply” in a capitalist economy—produced product, available capacity for production—is the imperative that prime credit-rates among central banks must be not higher than between 2 percent and 4 percent effective rate per year, and that prime lending rates by commercial and savings banks for first mortgages and for operating capital and long-term investment loans must not exceed the 5 to 6 percent range. The debt-service costs of credit must be substantially lower than the average rate of profit on current productive investments.

All the points we are about to develop here will

be more easily grasped by the reader if we adopt, temporarily, the assumption that the entire U.S. economy is like one single productive employer. This is sound, since the economy tends to operate as if all the individual firms added up to such a single employer. More accurately, whether individual firms' activities do or do not succeed in matching the potentials of the United States' economy as a hypothetical single productive enterprise is a way of measuring whether or not existing credit, fiscal, and other policies of government are, or are not promoting optimal performance of individual firms.

This assumption is necessary if one is to see the matter clearly. Whenever the layman, or university economics professor proceeds from individual, isolated examples, he is deluding himself and anyone else foolish enough to be trapped into that way of thinking. Isolated examples as such prove nothing in economics. *An economy is the interaction of all the “elements” of the economy.* What the effects of an individual firm's practices will be on the economy must be discovered by examining that economy as a whole; it is the effects on the economy as a whole which will ultimately, or even earlier, determine the effects of that transaction on the firm itself.

Let us pause for a moment to review the issues of the debate concerning federal loan guarantees for the Chrysler Corporation. If the United States

had followed the policies of "social Darwinism" proposed by General Motors' Murphy, what would the effects of such a policy have been on the United States' economy as a whole?

In fact, taking the United States' economy as a whole, that economy is presently operating near or even below the breakeven point. It is operating below breakeven on monetary account, and is close to or below breakeven on the economic account. What, then, is the effect of closing down a number of large and other firms for reasons of "competitiveness"? By destroying capacity in that way we exclude bringing production levels up to the point that economic recovery could be possible. The effect of such a "competitive" policy would be to drive prices up, by increasing the ratio of national overhead costs to the income of production.

Now, to return to the discussion of S' .

S' is distributed both as wages-equivalent and as capital goods. The wages-equivalent employs additional labor. The capital goods are either the tools of employment of additional labor, or they are used to transform the technology of existing production, increasing the capital-density (and, energy-density usually) of that point in the production cycle. Thus, the credit created and issued for such distribution of S' is secured by the increased production resulting from the productive investment. This increased production is either an

expansion of total productive employment, or an increase in the rate of output of points in the production cycle.

In other words, credit so used creates new masses of money. *In effect, supply creates demand.*

In respect to consumer-goods circulation, prices determine demand. This is not done by the ratio of available goods to demand. It is determined by the ratio of the total price of consumer goods available to the purchasing-power determined by wage-equivalent rates. *So, it might appear to a superstitious person that increasing wages increases demand, and that raising prices lowers demand.* What happens, in fact, is that the prices-wages ratio determines what portion of total production capacity shall be circulated as consumer goods, as distinct from the portion distributed as capital goods. To restate this point, increases in the prices-wages ratio shift the ratio of all production allotted from consumer- to investment-goods production.

Essential consumer demand is "inelastic." In principle, the level of potential productivity to be represented by a labor-force requires a corresponding quality of education, culture, and standard of living. If these requirements are curtailed significantly, the potential productivity of the labor-force will tend to be reduced. If the standard of consumption is substantially increased above those levels, no significant increase in realized productive potential will occur, since the rate of investment in

new technologies will be inadequate to transform potential productivity into actual increases in productive output-rates. The required standard of consumption overall rises in tandem with technological progress.

However, this does not mean necessarily that the number of dollars in a pay envelope must increase.

In a well-managed economy, increases in productivity are cheapening the cost of consumer products, as well as improving the quality of those cheaper products over relatively more costly previously produced like products. A well-managed economy, undergoing high rates of expansion, is deflationary. So, a constant wage in dollars should be a wage constantly improving in terms of its real content.

Of course, the postwar U.S. economy has been far from well-managed.

Fools argue, and the credulous believe that a rapidly expanding economy undergoes inflation in consequence of "heating-up." That is utter nonsense. If an expanding economy is undergoing inflation, this is not because of the expansion of production, but because of the expansion of non-productive overhead costs.

For example, in our data-processing industry, the most rapidly expanding field of large significance in our economy, the general trend in recent years has been a 50 percent reduction in the cost

of processing unit-data per year! Many of you can demonstrate this by looking into your pocket or briefcase where you carry the pocket calculator, or on your wrist, where you wear the "liquid crystal" computerized watch. This breakthrough in cost-reduction is a by-product of the NASA program, in which the basis for such benefits to the civilian economy was fostered.

Or, looking at the comparison between our own nation's steel industry and those of Japan and West Germany, we discover that German steelworkers have real wages higher than those of American steelworkers, and that American steelworkers perform their jobs at equal or higher rates of labor-intensity. Why, then, is American steel not competitive? Because Japanese and West German firms have invested in plants of new, improved technologies, whereas U.S. Steel and Bethlehem have succeeded in imposing a virtual "zero-growth" policy upon our entire steelmaking industry.

Let us now focus more sharply on the two kinds of investment of S' .

In the simplest case, S' is used by our nation's economy to create new productive jobs. The credit created for that investment becomes wages and other income, which enter into expansion of the monetary aggregate as increased purchasing power. The increment of S produced by these added productive capacities pays off the debt-serv-

ice on the credit issued, and creates also an incremental contribution to S' .

In general, the only way in which an economy can circulate S' is through creation of credit.

This credit is of two forms. The simplest form is "savings." The more exotic aspect of credit is governmentally created credit.

In the case of *savings*, households subtract part of their gross incomes from household consumption. These "savings" are then either directly invested in equity of productive and other firms, or are loaned. These loans occur either directly, or through deposits in the banking system. If wages are sufficiently high, this becomes an important part of the creation of capital: households voluntarily reduce the total volume of potential consumer goods production, to increase the ratio of capital goods production and consumption.

That source of savings-credit-equity is not adequate. The state, or foreign lenders, must go into debt to a central banking system, creating fiat credit which is issued to investors against the security represented by productive investments. That debt, which appears to be a fiat debt in one instant, is in fact a secured debt as long as the lending of this credit is secured against productive investments.

The system works through using both forms of credit together. Risk-capital ("saving") covers a significant portion of the total new credit-equity

generated through investments; created credit covers the balance. By assuring that the after-tax income from profits on equity is at a higher rate than after-tax income from lower-risk secured credit to investors, the system tends to work.

However, if government-centered credit expansion were employed to finance a shrinkage of the ratio of operatives in the national labor-force from 63 percent (1944) to 38 percent or so today, as has been the long sweep of developments in the post-war period, then *all of the government debt incurred for that purpose (plus arms production) is unsecured debt* in respect to the production resulting from such use of debt-creation.

The system—*the American System*—works provided we act to maintain fair rates of profit for current improvements in production, and also act to maintain a fair wage-level. This requires, today, preferentially cheaper credit for investments which increase the ratio of persons employed as productive operatives—at the expense of administrative and service ratios—and also requires preferential tax-treatment for investment of savings and retained earnings in productive enterprises.

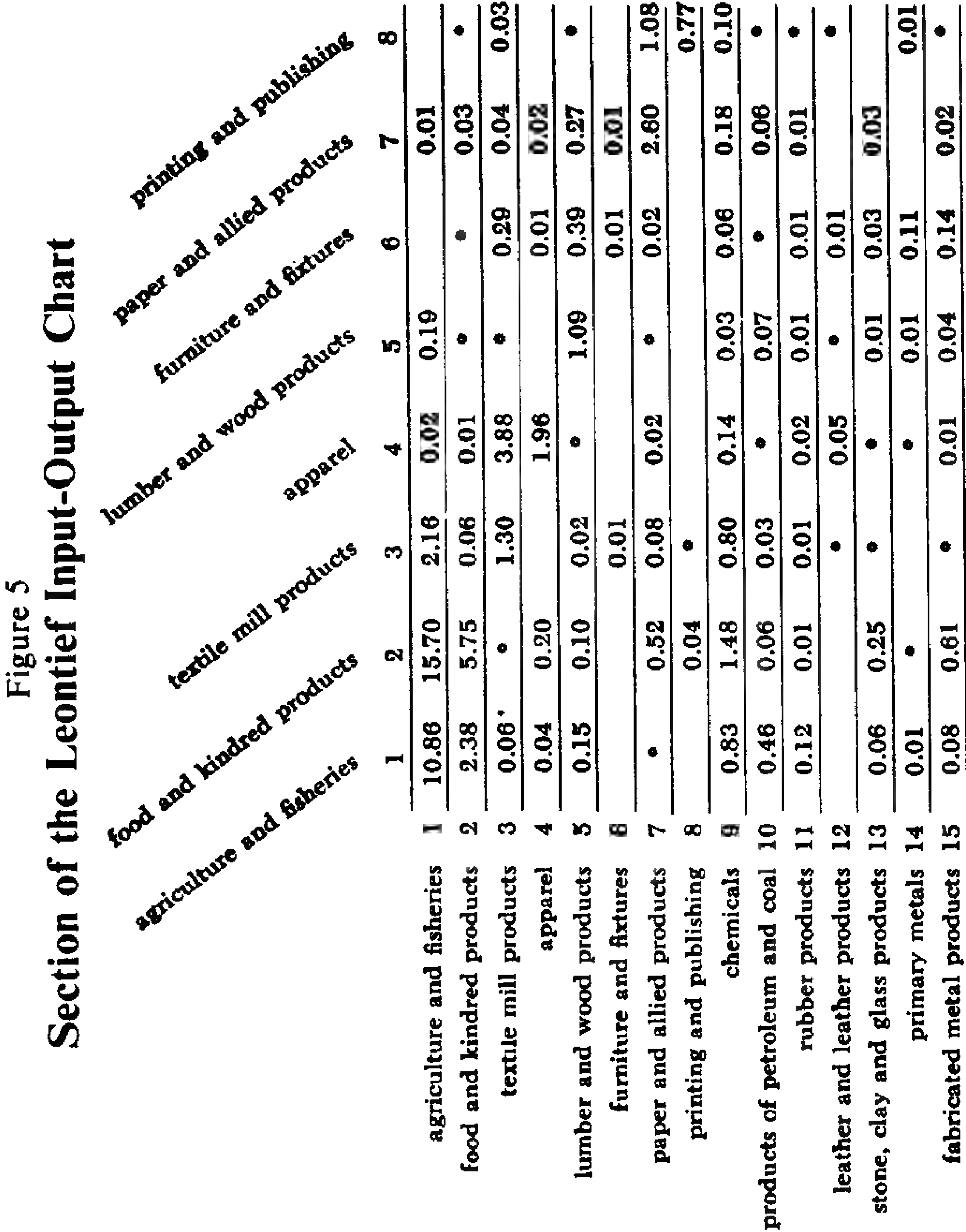
The system also requires federal government action to maintain a stable value of currency, and an adequate supply of credit at prime rates of not in excess of 5 to 6 percent for productive investments, and for first mortgages on new construction and capital improvements, and for first mortgages

on used housing and improvements on the basis of prices which reflect the comparable quality of new construction and repurchased older real properties. Not accidentally, the best rates of improvement in our national economy have occurred under the credit and national-banking policies consistent with Hamilton's 1790 reports to the Congress on these topics.

Now, let us consider the second aspect of investment of S' , investments which increase the effective capital-intensity of the production cycle.

Any such investment, provided it does in fact represent an economy (increase of productivity) at the point of investment, must necessarily increase the productivity of the entire economy. It accomplishes this result in the same way that an improvement in one of the departments of a manufacturing firm must benefit the entire firm.

If the reader will glance at *Figure 5*, a mere part of a Leontief-type input-output diagram of the U.S. economy, the reader sees illustrated the principle that our economy is highly interconnected. The prices of most intermediate products affect the costs of production of many other products. If we, then, lower the unit-cost in any one of these branches of our industry, we correspondingly lower the costs of all industries employing that product. A few "strategically" selected concentrations of technological improvement in our whole economy can always be detected, such that those



improvements will have the greatest benefit to the economy as a whole through the effects of such interconnections.

Today, the single most effective such improvement is a cheapening of the cost of energy, just as increases in the cost of energy are the most efficient way to ruin our economy. Today, massive increases in the number of operating nuclear-energy plants is the highest-priority approach to improving the economy as a whole.

In the case of the development of industrial Germany, the collaborators of von Cotta and List developed the metals and chemical industries as a matter of nationalist forces' strategic decisions to focus limited resources on such strategic choices. This sort of thinking was given its most concentrated expression in the German discussions, centered around List's work, of the development of railways. The initial development of the German national railway system followed a strategic-economic plan. The plan was based on the role of railway transport in making possible the development of the nation.

This was hardly peculiar to the thinking of the American faction among German nationalists. Roads, bridges, and canals were the center of eighteenth-century economic development policy among France's Colbertistes. George Washington led the American Revolution's military forces as, in part, a fight for a system of highways and

related public works. Fulton's development of the steamboat and other contributions is an expression of the same viewpoint. Until the British-allied Manhattan bankers took over control of United States credit during the years after Lincoln's assassination, the development of railways in the United States was an economic-strategic decision of the Whig forces represented by Lincoln.

Similarly, the painter Samuel F. B. Morse's development of the telegraph. Morse's chief activity throughout his adult life into the Civil War was as a leading U.S. intelligence operative. During the 1820s and thereafter, Morse worked under the direction of Lafayette in Europe. Morse used his "cover" as a painter to penetrate into high circles in Europe, so to uncover plots against the United States. It was in the course of his work as a Lafayette-linked U.S. counterintelligence operative in Europe that Morse's Paris activities intersected leading scientific circles in that city. These scientific circles were, of course, a continuation of the Ecole Polytechnique organization of Lazare Carnot and Gaspard Monge, the scientific circles allied to Lafayette. It was in conjunction with those Paris scientific circles that Morse devised the telegraph system.

The telegraph should not be viewed as just Morse's successful invention. The development of the telegraph was a strategic political-economic decision. The economic development of the United

States required improved communications. Uppermost were the needs of the U.S. intelligence service and allied military command—at that moment. Like the railroads, the Morse telegraph served as a leading part of the process of binding the developing sections of the United States into one, centrally governable nation.

That is the way the author thinks—in the same directions as his predecessors among American, French, German, and Japanese of the eighteenth and nineteenth centuries, like Leibniz and Colbert, like France's Louis XI, Henri IV, Richelieu, Mazarin, and our own Benjamin Franklin. We of that tradition create supply and demand according to the discerned requirements of our nation and human development generally. We despise those miserable "witch-doctors" who represent supply and demand as the playthings of some unearthly "invisible hand." We have pity for those superstitious citizens who believe in such ghastly nonsense-fairytales as the pagan diety "the invisible hand."

We must not imagine that the leading forces of Britain actually believe in the existence of an "invisible hand." They preach the "invisible hand" to the superstitious folk, but do not believe in it themselves. They, when they have the power, rig supply and demand; just as we, when we have the power, rig supply and demand our way—not theirs. They rig supply and demand through private bankers' control of the credit of nations, the

interest-rates charged, through policy-agreements to extend credit for this purpose, and not for that. They rig the trade and tariff policies of nations, using their control over the indebtedness of nations as a key lever in dictating such terms. The doctrine of the "invisible hand" is merely a ruse, to delude the minds of the superstitious, to the effect that ordinary people lose the power and inclination to notice the ruling, very substantial hand governing supply and demand. If the superstitious can be induced into believing that the hand of London's financiers is an invisible one, then popular forces lose the will to interfere with London's dictatorship over supply and demand.

That is what the superstitious folklore of "supply and demand" is all about. It is a magician's sleight of hand trick, that doctrine; if you believe the doctrine, you remain a plucked goose at the mercy of the fellows who instruct you in that doctrine.

In the current period, the promoters of the delusion, "supply and demand," have become more shamelessly open about this business than ever before in recent memory.

By "invisible hand," they acknowledge, they mean explicitly that you, the ordinary citizen, must direct your government not to meddle in the dictatorship of powerful international banking and petroleum cartels over the fate of nations, including the U.S. economy itself. The "invisible hand,"

they openly assert, defines an area into which government interference must not reach. It is, they assert, a power above the power and proper reach of governments; it is, they admit, the power of a gang of private bankers which has placed itself higher than all governments. It is "invisible" only to those sufficiently brainwashed not to see.

Back to Hobbes and Locke

The summary description of the "invisible hand" or "supply and demand" mythologies we have just given is adequate as far as it goes. The picture is more complete after we have referred again to the remarks given at the outset of this chapter. That we do now.

Both Hobbes and Locke proceed from the "reductionist" axiomatic standpoint of Baconianism (or, its other name, "neo-Aristotelianism"). The term "reductionism" signifies a fictitious mental picture of the universe in which that universe is assumed to be composed of a fixed number of elementary, self-evident individual particles. The "immanent" qualities, attributes, "propensities," of such particles are assumed to define the interaction among individual particles. Nothing higher than such particles and their pairwise interactions exists as empirically real for human knowledge. All other conceptions of man and nature in the large are regarded by the Baconians ("neo-Aristotelians") as mere mental constructions. Another

term for such mental constructions is "inductive generalizations."

From this miserable neo-Aristotelian concoction comes the pitiable folk-saying of our miseducated citizens: "That's merely a theory, not a fact."

The distinction of the social doctrines of Hobbes and Locke is that they extend this reductionist Baconian (neo-Aristotelian) doctrine to man and society.

Hobbes insists that man is merely a talking beast, whose only self-interest is located in individual man's animal nature, passions, and so forth. Hence, Hobbes's doctrine of a universal warfare of "each against all." Only an arbitrary dictator, an absolute monarch, equipped with adequate force, could impose order upon the inherent, feral anarchy of human society.

That is but another way of saying that "free enterprise" requires a dictatorship. The logical outgrowth of "free enterprise," in the British usage of that term, is Adolf Hitler.

John Locke's restatement of Hobbes's proposition is, curiously enough, endorsed by many credulous persons as the virtual discovery of modern political democracy.

Locke's conception of man is epistemologically identical with that of Hobbes. Only in its appearance is there an important distinction. Whereas in Hobbes's argument, the dictator's role and powers must be naked before society, in Locke's argu-

ment, faced with a modern society affected by the republican experience of the Commonwealth Party, the dictator requires that his very real dictatorship be prudently disguised behind the mask of "constitutional monarchy." *The ruling, dictatorial hand must be made relatively "invisible" to the mass of the ruled.* The name of that mask is the "social contract." This notion of the "social contract" is the more generalized name for Adam Smith's "invisible hand."

How does the British or Canadian parliamentary system work in fact?

Each is, in the final analysis, a dictatorship by a cabal of aristocratic and financier interests, a cabal whose institutional reference-point is the British monarchy. In Canada, this arrangement is relatively most naked.

Canada is governed by the Crown's appointed Governor-General. The governing strata of Canada are a body of families and persons assembled around the Canadian branch of the Queen's own Hospitaller order, the British Knights of St. John of Jerusalem. That group of persons overlaps the top-down control of the centralized Canadian banking system, and is linked otherwise to London by the key role of leading Canadian monarchists in managing the same Special Operations Executive (SOE) aspect of SIS as Beaverbrook's World War II SOE apparatus.

The broader governing agency of Canada, the

Governor-General's general staff, so to speak, is represented by the Privy Council. This is a body of persons selected, top-down, from among prominent Canadians.

On the lowest level, there is the parliamentary government. The laws passed by the parliament are interpreted after enactment by the Privy Council, which approves various sections of the laws for implementation, and interprets the implementation for instruction of the administrative bureaucracy, including the judiciary. In effect, from the standpoint of the agency which controls the real power in Canada, the parliament is a diversionary side-show, as the empty theatrical quality of debates in that parliament reflects.

The parliament is a political safety-valve, a talk-shop, which aids Canadians in cultivating the delusion that Canada is something other than still a colony of Her Britannic Majesty. This is necessary, since each of the culturally divided regions of Canada (Maritimes, Quebec, Ontario, Prairie States, British Columbia, and the Territories), has its own popular, implicitly anticolonial impulses of some weight. In Ontario, there are Canadian-nationalist, American, as well as Empire Loyalist currents. The old Social Credit Party had a firm footing earlier in Canadian agrarian populism. The Americanism of British Columbia is strong. Quebec's case is conspicuous. If the New England region were economically friskier, the Maritimes'

Americanist potentialities would come to the fore. The focusing of these various political impulses of the Canadian population on the illusions of parliamentary influence diffuses the otherwise potent coalition of many of these forces against the naked colonialism existing behind the parliamentary charade.

That was the essential content of the so-called Glorious Revolution of 1688-1689 in Britain. The same arrangements we summarily described for Canada exist for Britain, with the distinction that the Governor-General and Privy Council of Canada represent this same sort of a rule *as rule by a foreign, colonial power*.

Exemplary for the span of the history of the United States as a nation is the case of the dictatorship of Prime Minister William Pitt the Younger.

Pitt was immediately the puppet of Lord Shelburne, a figure too notorious to assume the office of prime minister himself. Pitt was placed and kept in power by buying up the overwhelming majority of the Parliament with bribes from the British East India Company and Barings bank. The generations of ministers typified by Pitt, Canning, Palmerston, and Lord John Russell represent a continuation of Shelburne's specific form of dictatorial rule of Britain over the span of Britain's determination to effect a military reconquest of the United States (1783-1863).

The dictatorship centered around the British monarchy, represented first by those aristocratic families whose continuing political traditions expressed the forces of the Cecil coup d'état and the Stuart reigns. It includes otherwise those financier interests assembled around the Bank of England which traced their collective origins to the "black nobility's" Rome-Genoa-Geneva-Amsterdam-London axis of rentier-finance: the Bank of England itself, the British East India Company, Barings, Rothschilds, and so forth.

Institutionally, this dictatorial body of monarchy, aristocrats, and bankers reproduced itself through the contributions of Oxford and Cambridge to the SIS and governmental bureaucracies generally, and through the entry into military service and similar state activities by those who entered these careers directly from the aristocracy's public schools. Bentham, the Mills, and so forth are exemplary of key individuals who performed special roles on behalf of the dictatorship.

Today, the real power of Britain lies not in the resources of the British internal economy.

The principal source of financial and related power of the British monarchy is the powerful "three sisters" of the international illegal drug cartel, centered around the HongShang bank, a London-controlled network of drug revenues including Hong Kong, Bangkok, Singapore, the British West Indies, and the Canadian banking

system. This traffic exceeds \$200 billion annually in international traffic, and nets London financial interests in excess of \$100 billion a year.

The second-ranking source of British financial power is the London petroleum-multinational cartel, headed by British Petroleum and Royal Dutch Shell.

Third is the massive financial holdings of British interests overseas, notably including its Indian interests, the largest single factor in that nation. This is buttressed by various other raw-materials cartels centered in London, and by British policy-making control over the International Monetary Fund and World Bank.

Through Manhattan's role as a partner in this British-Canadian arrangement, the greatest concentration of private financier power in the United States is also a support for British policy-making over much of the world, as well as being the vehicle for massive subversion of influential public and private institutions of the United States.

In the latter connection, it is significant to note the financial control of U.S. telecommunications firms, as well as major news and entertainment media by British-centered financial interests. This should be assessed, in part, in contrast to Morse's development of the telegraph as a measure in the vital strategic interests of the United States. British and allied interests have centralized control over our nation's principal news and entertainment

media, and have been able to circulate lies on major issues of national and international developments with an impunity Joseph Goebbels might have envied.

Under these influences, the United States has surrendered its control over the nation's currency and credit by degrees. The 1879 Specie Resumption Act was the first decisive measure surrendering U.S. national credit to London's control. The establishment of the Federal Reserve System was a further, qualitative weakening of U.S. control over its own currency and credit. The measures enacted under the influence of John Connally, Paul Volcker, and Henry Reuss in 1971 virtually ended the vestigial control over credit and the currency by the U.S. government.

Now, the arrogant swindlers of London and Manhattan nakedly assert the doctrine that control of mechanisms of money and credit must be kept out of the hands of political decision-makers, left to "technicians."

Some go much further, as do former Treasury Secretary Blumenthal and Undersecretary for Monetary Affairs Anthony Solomon. These treasonous gentlemen demand that the United States surrender its national sovereignty to the International Monetary Fund in matters including U.S. monetary, credit and fiscal policy, wages policy, and so forth and so on—that the United States' foreign trade and internal affairs be placed under

the foreign dictatorship of "IMF conditionalities," IMF "technicians."

Why? To give freedom of expression to Adam Smith's "invisible hand."

The "invisible hand" is, and always was the combination of aristocratic and rentier-financier interests assembled around the British monarchy.

The comparison of Hobbes and Locke is that Hobbes proposes naked dictatorship, whereas Locke proposed the same dictatorship behind the mere mask of a democratic face. The "invisible hand" is not some unearthly potency; it is the naked dictatorship over our affairs, over "supply and demand," by a body of conniving men and women exerting that dictatorship from day-to-day, a dictatorship concealed behind a thin mask of inefficient democratic charades.

The Quigley Thesis

The shading of difference in style offered by Hobbes and Locke respectively turns our attention rightly to a large book, *The Tragedy and the Hope*, published in 1966 on behalf of Jesuit author Carroll Quigley.

Quigley more or less accurately identified the New York Council on Foreign Relations as the center of a successful British subversion of the United States. He correctly traced this subversion most immediately to the circle of John Ruskin and Rothschild protégé Cecil Rhodes, through Lord

Milner's "Round Table Group." However, rather than denouncing this subversion, Quigley argued in effect that the dictatorial subversion had reached the point of maturity at which it ought to be brought into the open before the public generally. Quigley proposed, in effect, to move away from Locke's dictatorship with a democratic face, to Hobbes's overt dictatorship, resurrecting such forms as the Cabal of the Restoration Stuarts.

Quigley's proposal was adopted most prominently by the same 1975 Tokyo meeting of the Trilateral Commission which accepted David Rockefeller's sponsorship of Jimmy Carter as the next President of the United States. The theses submitted by Samuel Huntington, now incorporated in the implemented PRM-32, the Federal Emergency Management Agency (FEMA), was the leading expression of the Trilateral Commission's adoption of an antidemocratic, Hobbesian perspective. The establishment of FEMA under the Carter administration, as a major step toward imposing a dictatorship on the United States, illustrates the way in which David Rockefeller et al. viewed the use of pseudopopulist Carter as an instrument for initiating a legal, dictatorial coup d'état in the United States.

Now, the Trilateral Commission has dumped President Jimmy Carter's reelection cause. The nomination of either Carter or Kennedy at the 1980 Democratic Party convention is intended to

ensure the election of a Republican candidate. The first choice of Republican candidate is currently George Bush, the second choice John Connally, and under other certain unlikely circumstances, the Trilateraloids might accept the mere actor Ronald Reagan. The Republican candidate is assigned the task of implementing Phase Two of the 1975 Trilateral Commission package, plus the 1975-1976 *1980s Project* package of the New York Council on Foreign Relations. Behind the scenes, the same group of persons who presently run the Carter administration will run the Republican administration.

I am echoing statements which Henry A. Kissinger has made recently to leading circles outside the United States, including statements made directly to foreign heads of government. Henry has insisted that Carter is no longer actually the President of the United States, but that the Trilateral Commission is, and that he, Henry, is the spokesman of the Trilateral Commission. On one occasion, Henry stated that John B. Connally will be the next President of the United States. Henry's choice may have changed since that recent statement in support of Connally as the next puppet-President, but the gist of the point remains the same.

To speak frankly, President Jimmy Carter is essentially a yo-yo in the hands of Cyrus Vance, Zbigniew Brzezinski, and the rest of that gang.

They manipulate Carter, playing on poor Carter's delusions concerning his own political "image." Like a yo-yo, his popularity is sent up, and then down—pending the time the advisers simply cut the poor yo-yo's string, and his political reputation falls permanently to the floor. The Carter administration is not the administration of the Executive by President Carter; it is a gang of Council on Foreign Relations manipulators jerking the poor Carter yo-yo up-and-down in a game of "crisis management."

In the opinion of leading CFR circles, after Carter comes a Republican "von Papen." After "von Papen," Hitler.

The question is, whether Democrats are foolish enough to consider the choice between Carter and Kennedy as real, or whether the present succession of crises will arouse those citizens from a sheep-like slumber, to field a Democratic candidate—certainly neither Carter nor Kennedy—who will defeat Bush or Connally or Reagan in the 1980 general election. If that does not occur, then Americans, like the Germans of 1929-1933, will march sheep-like into the neo-Schachtian, fascist economic dictatorship the London bankers have assigned as their miserable fate.

London has turned back from Locke toward Hobbes. Hence, the continuing babbling about the miraculous powers of the "invisible hand" is now becoming a dying phase of history, as the doctrine

of open world dictatorship by the “technicians” of the IMF and World Bank leads to an overt dropping of the Lockean mask—as Quigley indicated.

Why “Riemannian Economics” Is Necessary

We refer the reader once again to *Figure 5*.

It should not be difficult for the reader to conceive of describing the entire U.S. economy—or, the world’s economy—in a manner like the input-output matrix of *Figure 5*.

Every industry has an output. Each industry requires various inputs from the outputs of other industries. These input-output relations define pathways of flow of production through the entire economy. With these flows we associated *coefficients* (fractions of “1,” where “1” represents the total required output of an industry at each point). These coefficients, as ratios, are better converted into other units of measure. Dollars of value of output is one useful such coefficient. A function which associates a standard-reference dollar with values of $S'/(C+V)$ is much, much better. If functions of $S'/(C+V)$ are used for this purpose, rather than current values of $S'/(C+V)$, a still better analysis is enabled.

Now, the reader should think of what happens over the medium-term of economic development under the influence of advances in technology.

The effect of such development over the

medium-term (for example, in the order of seven to fifteen years) is to drop out some of the input-output pathways, and to add new kinds of industries, or revolutionized industries to replace old forms of those industries.

These changes in the economy over the medium-term of technologically driven economic development change the input-output matrix as a whole. New “cells” are added to the matrix. Pathways are radically altered. Thus, in mathematical terms, the *characteristics* of the matrix have been changed.

These changes in characteristics under such conditions correspond to increments of the value of a function $S'/(C+V)$ for the economy as a whole. These changes represent qualitatively-higher states of negentropy of the economy. *These changes are reflected most significantly as changes in the composition of capital formation.* Those changes are best assessed in terms of the *energetics* of capital formation’s composition of the economy.

Such changes are the characteristic feature of technologically driven economic development.

Thus, we have the following. If we label the characteristics each associated with a successive qualitative state of the economy by subscripts of reference $n, n+1, n+2, \dots$, then that ordering is subsumed by a characteristic for such ordered characteristics of a higher order. This higher-order characteristic we denote by N .

The mathematical problem so presented is of a

form developed hereditarily from Riemann's 1859 treatment of shock waves, the same physics we properly employ for study of the emergence of "solitons" in a controlled plasma reaction and for study of scattering of high-energy plasma beams. This physics is related to the de Broglie/Schrödinger analysis of the special kinds of wave-functions represented by the existence of elementary particles such as electrons. This was an analysis which Schrödinger enriched from the starting-point of Riemann's mathematical physics of shock waves.

Admittedly, this may be over the head of most readers in and of itself. Nonetheless, we report those statements to them to make a point which, happily, is not properly "over their heads." By these statements we have identified the fact that one kind of mathematical physics is required for economic analysis; whereas, a different kind of mathematical physics must inherently fail.

We restate the formulation: *the mathematical physics method indispensable for analyzing the effects of technological progress on an economy* is the Riemannian physics of "a multiply-connected manifold," in opposition to any sort of physics associated with the Newton-Maxwell current.

That, summarily, is the reason the economic analysis developed by the author succeeds, whereas all other efforts at such analysis are inherently, manifestly failures.

Prior to the author's breakthrough in economic

science, beginning 1952, all good political economists—for example, Colbert, Leibniz, Hamilton, Carnot's circle, and the Careys, List, et al.—shaped economic policy according to the empirically demonstrated rule-of-thumb, that technological progress did qualitatively improve the input-output matrix of economies. As in the instance of the planned development of roads, canals, railways, the telegraph, the German metals and chemical industries, and so forth, these economic thinkers and policy-makers developed specific economic-development policies by "inspection." By determining which of a range of optimal developments would clearly have the greatest benefit, they built national-economic policies around the selection of such crucial-strategic choices.

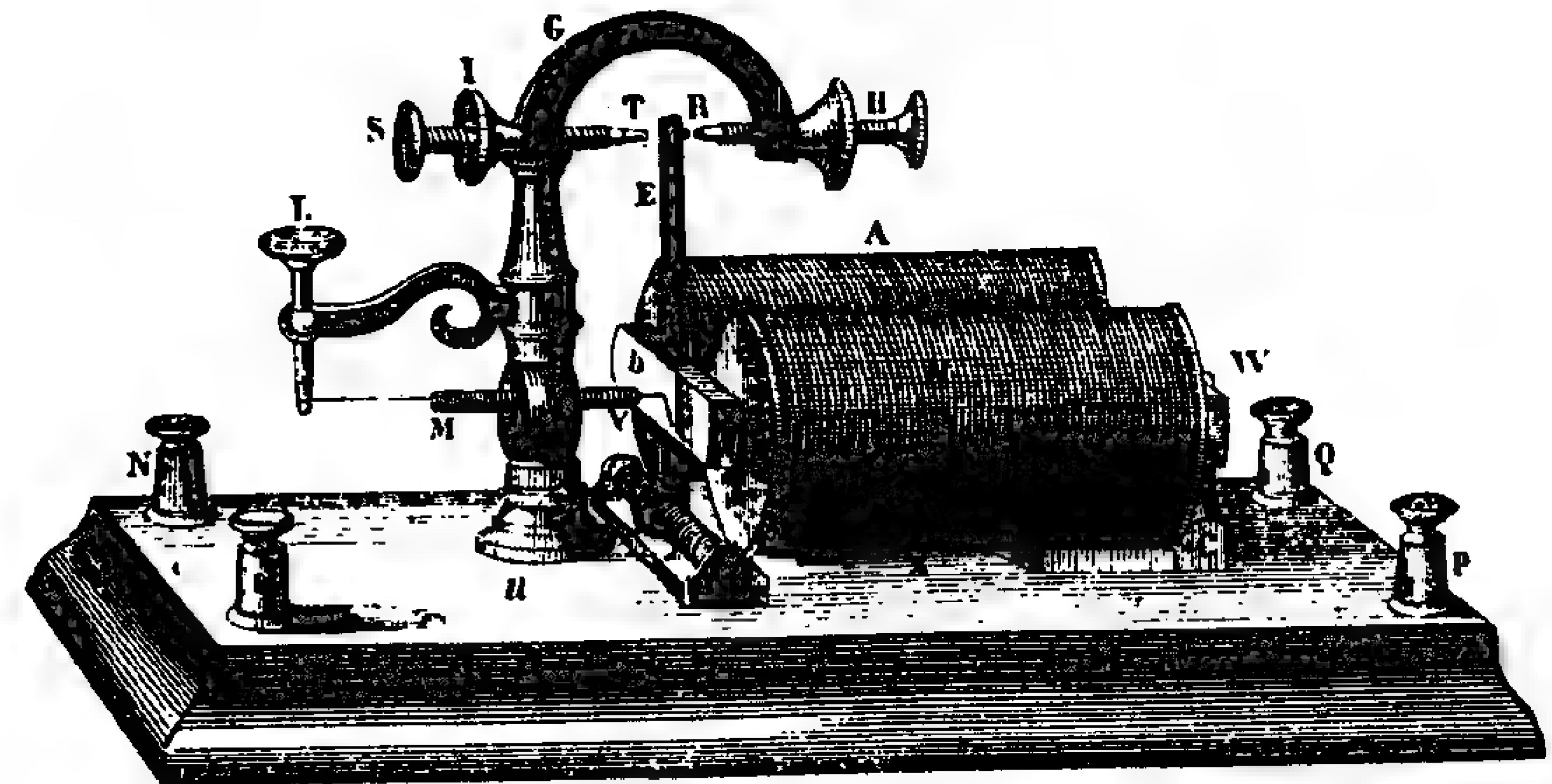
For example, if we have determined that the Ganges-Brahmaputra water project plus massive nuclear-energy development are the crucial-strategic choices of development for India, methods of inspection "bull through" those two projects, and develop the required supporting infrastructure of industry, agriculture, transport and energy-grids around the cornerstone of such crucial choices. The United States' most important post-Depression breakthroughs are the result of technological breakthroughs of that sort, typified best by the Manhattan Project and NASA's accomplishments. Make a strategic choice, and develop the infrastructure needed to support that

choice. That is the method of good economic policy-making by “inspection.”

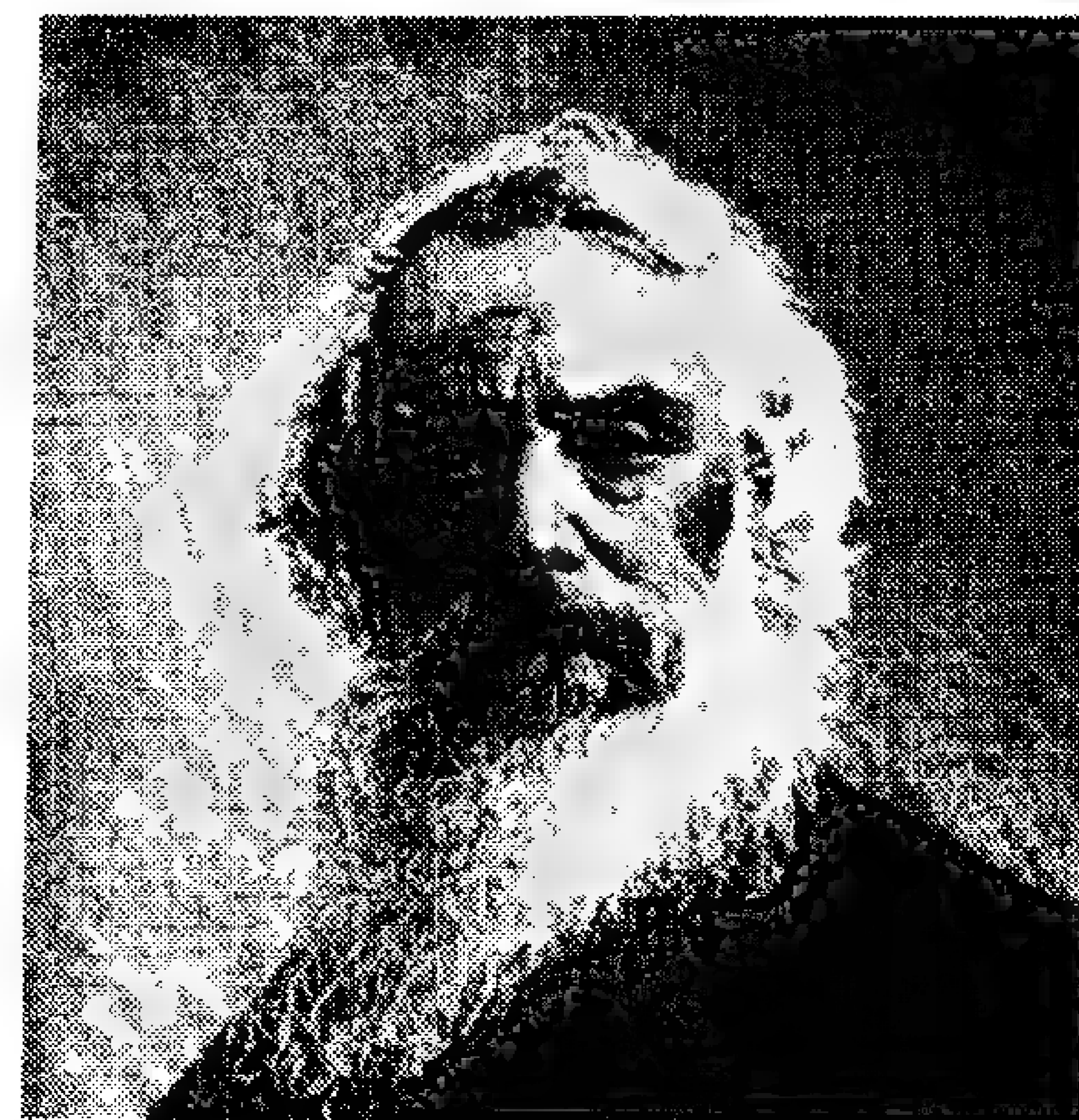
Since Carnot’s revolutionizing of warfare, with emphasis on the logistical aspect of war-winning, this same method of crucial choices by inspection became the approach to war-fighting embodied in Scharnhorst’s development of the German General Staff, and in comparable forms of accomplishment by American commanders. One makes crucial choices and relies on the developed capabilities of forces for improvisation to effect the supporting, “infrastructural” actions required to make the crucial choice succeed. (“Get a bridge across that river within forty-eight hours; I don’t care how you do it.”) General Staff planning concentrates on developing such built-in logistical-improvisational capabilities as a general force-capability capable of supporting any of the foreseeable elements of known categories of possible crucial-strategic choices. *That is the method by which things get done, in warfare or in economic development.*

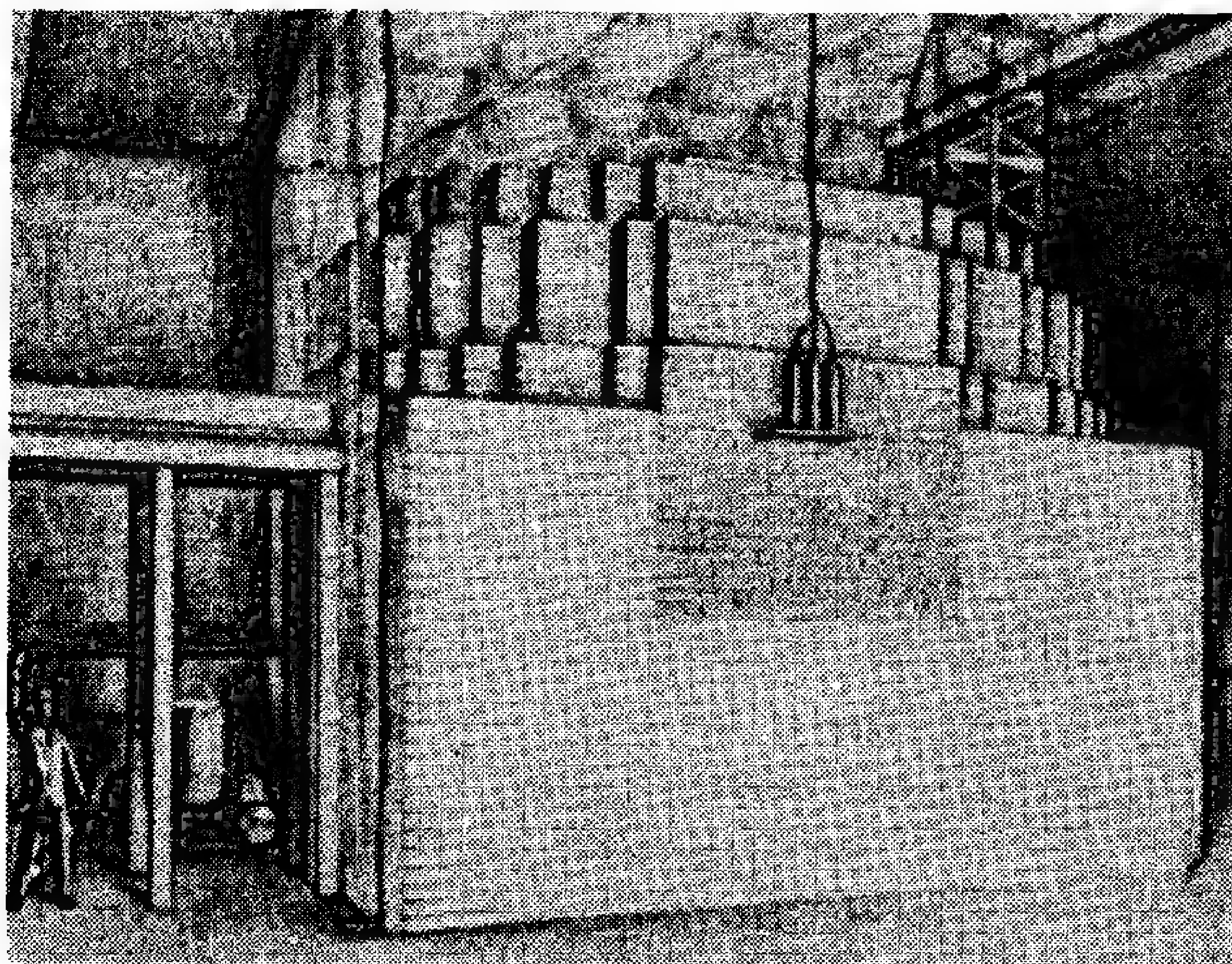
The structure developed by NASA is a qualitative advancement of our national potential capabilities for successfully implementing the method of crucial decisions by inspection with aid of “must do” supporting infrastructural accomplishments.

“Systems analysis” and its more generalized, associated doctrine of “systems philosophy” are inherently incapable of solving such problems. Exemplary is the aggravated internal failures of

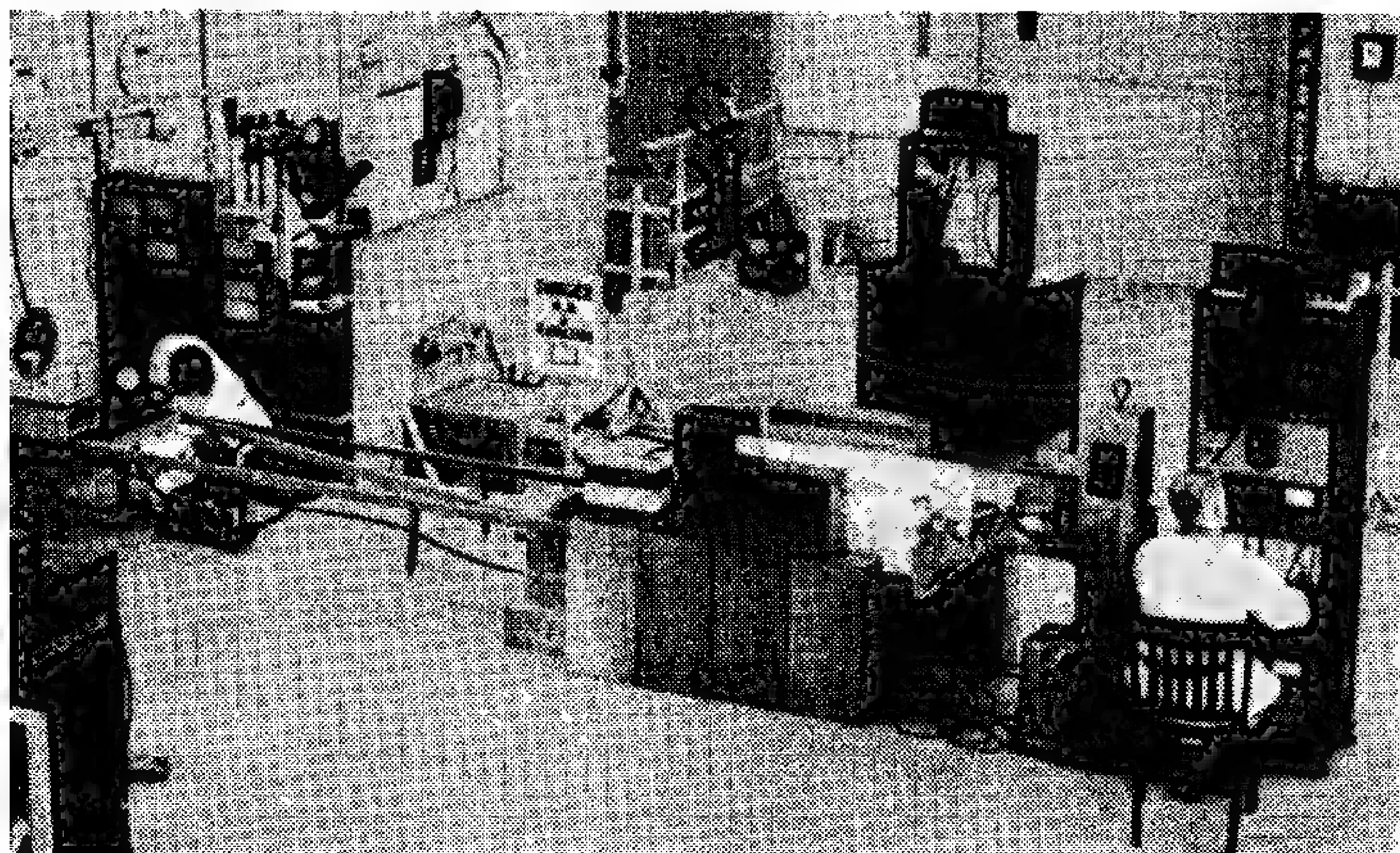


Crucial-Strategic Decisions that Transformed the American Economy: the invention of the telegraph by Whig intelligence operative Samuel Morse.





The Manhattan Project's first controlled chain reaction of nuclear fission, put into operation in Chicago in 1942; and one of the first nuclear reactors, for peaceful purposes, ten years later.



the Soviet economy under the growing, post-1965 influence of "systems philosophy." What has kept the Soviet economy functioning at some relative advantage to the post-1965, declining U.S. economy, is the de facto alliance of the Soviet military command and scientific community in promoting the development of advanced physics and its applications. The present, raging conflict between the "systems philosophy" faction and its allies, on the one side, and the military-scientific bloc on the other, displays the inherent incompetence of "systems philosophy" in that socialized, factionalized expression.

It is relevant to our present discussion to view the rise of "systems philosophy" influences within the Soviet command in comparison with Marxist economics.

For reasons I have elaborated elsewhere, Marxist economics as such is a failure. This statement is most emphatically true if we employ the concluding chapter of *Capital* II and coherent features of *Capital* III as our standpoint of reference for defining Marxist economics as a whole. Although Marx's work is permeated at many points with a contrary impulse, contrary to the gist of the formal, algebraic side of his *Capital*, the formal side is a failure. This failure is expressed most emphatically in those aspects of *Capital* in which Marx's attempts at algebraic formulations are essentially consistent with the same methodological approach

represented by more sophisticated mathematical approaches to so-called econometrics today.

What has occurred over the past decade and a half, most emphatically, is that those features of Marxist economics agreeable to the methodology of Cambridge University-centered “systems analysis” have been dissolved into the body of such “systems analysis.” Although Marx continues to be nominally apotheosized by the Soviets, in fact he has been reduced to the rank of a prophet of the “convergence doctrine” embedded within Cambridge-centered “systems philosophy.”

Marx's economics is essentially a stagnation economics. Marx is emphatic in his false characterization of capitalism, that it tolerates technological progress reluctantly. The centerpiece of his *Capital*, insofar as it represents an effort to outline a comprehensive formal analysis of capitalist economy, is that the capitalists' alleged abhorrence of avoidable technological progress is justified in capitalist self-interest by the fact that the falling rate of profit is a direct consequence of capitalist technological development.

That is also the central economic argument Marx offers for a socialist transformation. Since capitalism inherently cannot promote technological progress, Marx argues, there is an inherent opposition between the interest of capitalist accumulation and the positive development of the productive forces. Therefore, Marxist economics

argues—insofar as any representation is true to Marx's own position in the matter—that capitalism must be revolutionized into socialism in order to free the productive forces for development.

This aspect of Karl Marx is crucial in connection with the promotion of the study of Marx's economic work by the socialists of Cambridge University (like Mrs. Joan Robinson) and the London School of Economics. It is crucial in connection with successful British SIS penetration of the highest ranks of command of Moscow with the “systems philosophy” operation and the associated doctrine of “detente” as a bridge for the realization of “convergence theories” associated with “systems philosophy.”

Therein lies the danger of Marx's economics as such to the world today, in contrast to Marx's rather contradictory personal dedication to the positive development of society's productive forces. This dangerous aspect of Marx's economics is a useful reference point for understanding the greater danger embodied in “systems philosophy.”

The person who is adequately trained in epistemology, including the epistemology of scientific method and related matters of mathematics, has little difficulty in discovering what might be termed “Marxist ideology” in the kind of mathematical physics associated with James C. Maxwell. Like Marx's formal schema for capitalist economy, Maxwell's physics is a stagnation doctrine, or

“equilibrium economics,” by virtue of the inherent axiomatic assumptions of the governing method.

Hence, the persons, such as the dons of Cambridge’s King’s College, who argue that Maxwellian mathematical-physics methods applied to economic analysis prove that the present-day economy converges upon the limits defining a maximal, equilibrium-value, have done nothing but bring out at the end the axiomatic assumptions they adopted at the beginning. In the ranks of computer specialists, one would say “garbage in, garbage out.”

If such mathematical procedures are employed to shape the policies of nations, the economies so misguided will actually adapt themselves to the kind of “equilibrium,” or, to speak plainly, stagnation, embedded axiomatically in the mathematical method employed.

Under conditions of attempting to enforce “economic equilibrium,” the effect of continuing reliance on fixed coefficients of production in terms of presently defined natural resources, is to promote a rise in the cost of such resources. This inflationary effect pushes up interest rates and related financial costs. These financial charges then cannibalize the income of the economy, sending the economy into a downward spiral.

Let us restate the same point from the standpoint of the outlined basic economics of the preceding chapter. A stagnating economy is a zero-

growth economy, an economy in which there is no realization of S' . In other words, *there is no realized profit in the economy as a whole*. A zero-growth economy is a zero-profit economy.

Whence, then, do firms and financiers extract profit, rent, and interest from a zero-profit economy? They do so only by cannibalizing $C+V$; so that some firms accumulate relative profits through the cannibalistic destruction of other portions of the economy.

The classic demonstration of that is the Nazi economy created by Hjalmar Schacht. The slave labor/death camp system was merely the inevitable expression of Schachtian policies of “fiscal austerity.” To keep a portion of the entire Nazi-occupied Europe profitable, increasing portions of the rest of the populations and economies of Nazi-occupied Europe had to be looted to the point of destruction.

This same policy is rampant today in the “IMF conditionalities” policy, and the complementary “appropriate technologies” policies of Robert S. McNamara’s World Bank. The precalculated consequence of “IMF conditionalities,” according to studies, such as *The Limits to Growth*, made by the authors of those policies, is the reduction of the world’s population over two decades, from approximately 4 billion persons today, to between 1 and 2 billion by the year 2000. The means projected to accomplish such massive genocide

includes famine, epidemics, and homicidal social chaos of the sort we have witnessed recently in Bangladesh, Cambodia, and now Iran. *Anyone who supports IMF conditionalities today is clearly far worse than a supporter of Adolf Hitler. Yet, the Carter administration, plus Kennedy, plus the leading Republican candidates, all support that IMF conditionalities policy!*

Is it any wonder that the Carter administration has aided in promoting an explosion of the drug epidemic among our nation's youth, and that Kennedy and Senator Jacob Javits are leading promoters of marijuana decriminalization in the U.S. Congress? The destruction of the minds and morals of U.S. children and youth is fully consistent with the kind of world emerging from the economic policies they and the leading Republican candidates are supporting.

A zero-growth economy is not simply a stagnating economy. A stagnating economy is a downward-spiraling economy, the economic policy of mass genocide. The antinuclear policy is the leading edge of the zero-growth policy for the United States. Antinuclear energy movements are in practice movements promoting massive genocide.

Economic policy must be, at least, the use of the method of inspection employed by the leading authors and supporters of the American System of political economy. If we are to refine this method, to turn to adequate mathematical aids of economic

analysis in shaping policies, as we must, then we must employ the kind of mathematical physics which coincides with economic growth.

The development of new "cells" of a developing economic matrix is mathematically analogous to the emergence of a soliton or similar new entity in a plasma reaction.

That is the kind of mathematical analysis we must employ. If we are to use mathematical analysis at all, we must use Riemannian methods of that sort. Otherwise, we should use no mathematical analysis at all—but continue to rely on methods of crucial-strategic decisions formulated by inspection.

Those academic and other professional economists who babble about "equilibrium theory" and related "systems analysis" garbage are to be known to the layman-citizen as simply bungling incompetents. They are persons who must either show themselves capable of becoming rapidly, successfully educated out of such nonsense, or must be directed toward forms of employment in which they will be productively employed, ceasing to poison the minds of youth and policy-makers.

THE "VOLCANO THEORY"

The only clear solution for the deepening world depression is creating a capital goods export boom in the industrialized nations, by making a large part of the so-called developing sector of the world a self-expanding market for high-technology industrial and agricultural development. How that can be accomplished is outlined in the author's autumn 1978 *The Theory of the European Monetary Fund*, and his more recent *How To Fight Inflation and Unemployment*. In this present chapter we shall focus attention on one crucial feature of the general developmental process involved.

Among some leading Western Europeans whose views parallel those of this writer, there has crept into usage the name of "The Volcano Theory." In this chapter, we describe that version of the policy, and explain the issues involved.

The policy some influentials name "The Volcano Theory" is quite basic in itself. Today, say these Europeans, we shall export to the developing na-

tions our best, presently available capital-goods technology. Meanwhile, this export drive will enable us to develop more advanced technologies, which we shall export to the developing nations in the future. And so on and so forth.

Imagine a volcano in continuous eruption. The matter it spouts out today runs down its slopes, and also raises the volcano's mountain higher. The continued eruption sends more lava flowing out beyond the foot of the slopes, and also raises the mountain higher.

It is a good sort of pragmatic policy for the moment; it is not particularly sound theoretically. Let us explore the issue, to discover what is good, and what is defective in the "volcano" analogy.

In the preceding chapters, we have emphasized that the rate of economic development of nations depends upon an inflow of more advanced technologies. Conversely, nations which are relatively stagnating in rates of investment in technological progress lack the ability to maintain economic development, and must slide toward depressions for that reason. In other words, the value of $S'/(C+V)$, as we rigorously defined that notion of function, must rise at an adequate rate.

Not only does the United States, in particular, lack an adequate rate of investment in productive capital formation, the rate of development of investible new productive technologies has been generally on the marked downslide since about 1966.

In general, considering only the internal potentials of the industrialized capitalist nations, those nations' rate of basic scientific and technological progress has fallen too low to permit economic recovery by internal means alone.

However, relative to the world as a whole, we have at present technologies which can enable adequate productive labor to produce in the order of tens of thousands of 1979 dollars, whereas most of the developing sector is currently able to produce only in the range of thousands at most. By "transfer" of existing advanced productive technologies to these nations, we can increase the productivity of section after section of the developing sector's labor-force by an order of magnitude.

By so combining the development of the presently industrialized and underindustrialized nations of the world—or, at least, most of them—we can achieve a substantial rise in the value of $S'/(C+V)$ on a world scale, where no such economic improvement would be possible if the world's economics were "regionalized."

This program provides us a rising rate of growth over the coming quarter-century—on condition that we develop nuclear-energy production and technology with sufficient rapidity and deploy that technology on an adequately extensive scale. This growth, worldwide, can extend comfortably deep into a second, following quarter-century—until about 2030 A.D.

Between 2005 and 2030 we must have increased the rate of scientific progress and rates of realized improvements in technology sufficiently to engender and maintain a new "take-off."

In other words, somewhere between 2005 and 2030, the tendency of the developing-sector nations to catch up with the productivities of presently industrialized nations will confront us with a circumstance in which further continuation of economic growth depends predominantly upon the benefits of high rates of scientific-technological progress worldwide.

Herein lies the fault of the "volcano" analogy. The presently industrialized nations cannot expect to maintain indefinitely their relative height over the rising plateau (the developing economies) at the foot of the mountain. The "volcano" policy aims present practices of industrialized nations in a useful direction, but the analogy overlooks the crucial problem.

We must begin now to accelerate the rate of scientific and derived technological progress, to achieve rates of progress in that respect adequate to maintain growth rates as the initial surge provided by the peaking of the first quarter-century of development begins to peter out.

Let us now restate the key proposition involved.

The source of all the wealth of society is increases in the productive powers of labor (Alexander Hamilton, 1791 *Report to the Congress on the Subject of Manufactures*). The outcome of such

increases in the productive powers of labor is rises in productivity of labor through the combined benefits of scientifically directed improvements in education, culture, and design of capital goods of "artificial labor."

Presently, given low rates of current and even potential improvements in productive technology in the industrialized nations, the industrialized capitalist sector is not capable of effecting economic recovery from depression by itself. However, by exporting existing advanced technology to the developing nations, the combined sectors (industrialized and developing together) can enjoy a massive growth in productivity.

During the first quarter-century of that development (1980-2005), the rate of advancement in productivity of the combined sectors will accelerate, slowly at first, becoming very substantial during the second decade (1990-2000). However, if the rate of scientific and technological progress in the industrialized nations were no higher than was general for the period 1950-1970, during the interval 2000-2005, we must expect a tendency of the rate of rise of economic growth globally to level off somewhat. Growth would continue, but the rate of increase of the rate of growth would tend toward leveling-off. If 1950-1970 rates of scientific and technological progress prevailed beyond that, during the second quarter-century the rate of growth itself must be expected to tend to

level off, warning of a potential decline during the period beyond.

So, we must think ahead about 75 to 100 years—the maturation of three generations educated up to modern levels of science and culture generally. We cannot plan such a long span ahead; we must, however, think of the shaping of the development of institutions into such forms as provide our next generation with the proper foundations for taking charge of developing what it, in turn, bequeaths to the further generation.

What our immediate posterity will be able to accomplish, a quarter-century ahead, will be determined largely by the foundations we have established in the education of that next generation—and related matters. What kinds of life-goals, what quality of education, and so forth that next generation will have will be shaped during the decade or so immediately before us. Just so, wrong turns during the postwar period aided the enemies of our nation to produce the almost useless "lost generation" of the developing "counterculture" of the 1960s and 1970s.

If we adopt the right approaches for a quarter-century ahead, we shall be following that course of action which is increasingly rewarding to us during the years, the decade immediately ahead.

To some, perhaps, such long-range thinking seems only marginally relevant to treating our present problems. The following, more detailed

discussions should remove that suspicion from their minds. To such readers we say, "Be patient; we think you will be convinced of the soundness of our approach in the course of the pages directly ahead of us now."

We shall now examine these policy-matters in two phases. In the first phase, we shall place the emphasis on the quantitative side. In the second phase, we shall emphasize the qualitative side.

Composition of the Labor-Force

At the point of the first census of the United States, 1790, approximately 90 percent of the U.S. population was rural. Today, about 3 percent of the labor-force is engaged in rural occupations. About 1.5 percent of the labor-force—discounting those marginally engaged in agriculture—produces the food to feed our nation and much more besides.

That fact, and the history of its accomplishment, is a total vindication of Hamilton's *Report on the Subject of Manufactures*. This is the development of agriculture which Hamilton outlined as a key indicator of the objectives of the American System.

In general, we measure the relative backwardness of economies in first approximation by measuring the proportion of the entire labor-force required to produce the agricultural requirements of that population. France and the Soviet Union represent about 25 percent, by comparison with

the U.S. 3 percent. China, the most backward of all large nations, employs about 80 percent in rural occupations!

Not only did the improvement in U.S. agricultural productivity make possible a large urban labor-force. It was, as Hamilton stated, the development of manufacturing which made possible the development of agriculture. The consumption of industrial goods by U.S. agriculture today underscores that.

As technology advances, an analogous development occurs within the composition of the industrial labor-force itself. Just as the advancement of the productivity of agriculture increases the ratio of the urban labor-force to total labor-force, so the development of industry increases the percentile of the industrial labor-force engaged in production of capital goods.

As the technology of capital goods advances, the required ratio of scientists and engineers to industrial operatives increases. This increase is analogous to the growth of the industrial labor-force out of a shrinking rural population, and analogous to the expansion of the capital-goods portion of the industrial labor-force out of a relative contraction of consumer goods-producing rations of the labor-force.

By 1990, under continued economic growth conditions, the agricultural labor-force of the United States will probably fall to 0.5 percent of the labor-

force, producing twice or three times the agricultural product produced by U.S. farmers as a whole today. This will certainly occur by 2000 A.D.

So, the portion of the industrial labor-force engaged in producing consumer goods will shrink dramatically over the next two decades. The portion of the labor-force producing capital goods will rise absolutely, but the next generation of that labor-force will show a sharp rise in the ratio of scientists and engineers combined to the combined total of operatives in agriculture, manufacturing, mining, construction, and transportation. At least, the last ratio *must* grow dramatically if we have anything but dangerous lunatics leading our nation's development.

These shifts must occur in a policy-climate which aims at reducing combined nonscientific administration and services, public and private, to significantly less than 50 percent of the labor-force by some point during the 1990-2000 period.

This means new priorities for both education and employment. We must virtually eliminate social workers and kindred forms of services, while reducing sharply the paper-shuffling component of public and private administration. A great saving could be effected by virtually outlawing the institution of the "meeting" among public and corporate bureaucrats. There must be sharply higher standards of curricula for elementary and secondary schools, tailored to a sharp reduction in

the ratios of liberal-arts students (as presently defined) in colleges and universities. We must build the labor-force for 2000-2005 beginning now.

This is not a matter of producing benefits to be realized beginning 2000 A.D. The adoption of such priorities means establishing an annual improvement now, a current annual improvement which will be most beneficial to most of us in the here and now.

Quality of Development

Although we must cut away most of what we presently define as liberal-arts education, this does not mean a downgrading of instruction in the classics, history, and so forth. It means developing priorities in these fields amounting to an appropriately modern version of what the fifteenth-century and sixteenth-century Neoplatonists meant by "humanities." We shall treat that point here in due course.

For the moment, let us concentrate on scientific education.

The technology of 1980-2030 will center around outgrowths of the frontier-developments we presently associate with controlled thermonuclear plasma reactions and the related matter of "relativistic particle beams." Neither of these two interconnected fields will tolerate anything but the kind of Riemannian physics traceable to the implications of Riemann's 1854 dissertation on hy-

pothesis. Therefore, all scientific and related education, including the foundations for such education established in elementary and secondary education, must be governed by the objective of producing an adequate number of scientists dedicated to that approach and method, and corresponding orientations among engineers, technicians, and the emerging labor-force additions generally.

The author and his associates are presently engaged in developing revised curriculum-elements for preschool and elementary school appropriate to such requirements.

It has been determined that the most efficient foundation for elementary pupils' potentials can be established during preschool programs by focusing on mastery of the rudiments of the Al-Farrabi/Zarlino/Bach/Beethoven method of well-tempered polyphony. Children of the preschool age can master the rudiments of canonical composition to the point of incorporating such composing-activity as a part of play.

The distinction of the well-tempered system so defined is that it exposes the child to a problem-solving experience in which *necessity* (lawfulness) and *freedom* (creative innovation) are demonstrably compatible. This fact was stressed by Al-Farrabi, by Zarlino, and by their successors leading through Bach into Beethoven. Such approaches to music represent a development of the



Creating the labor-force of the future means teaching preschool and primary school children the principles of well-tempered polyphony.



From the principles of music, the child is then ready to grasp the principles of physical geometry—a child examines the surprising shape that results from dipping a wire configuration into soapwater.

mental potentials of the child, a development which can begin successfully during preschool years.

That is the foundation for a new educational policy.

It has also been determined that a proper approach to introducing geometry, not using formal proofs, enables the elementary-school child to master the rudiments of geometry during the earliest years. Instead of "proofs," the principle of construction in terms of locus is used, bringing the pupil so to the point at which a generalized notion of conics in terms of locus-thinking is reached.

At some yet-undetermined elementary-level phase, whenever the generalization notion of conics and cross-ratios of projections is assimilated, the pupil is ready to be introduced to the conception of "physical geometry."

This approach to instruction in geometry orients the child's conception of "physical geometry" in the direction of the notion of a multiply-connected manifold.

Such approaches eliminate the mental-destructive effects of "new math" approaches, and otherwise save wasted time and lapsed years. The included object is to eliminate approaches which miseducate the child in mathematical physical conceptions, the old problem which the "new math" profoundly aggravated. A pupil completing secondary-school education should have mastered the

conceptions which distinguish a proper mathematical physics, be a pupil prepared for professional education suited to the age of controlled thermonuclear reactions.

Let us pause for a moment to consider the economics of such a new approach to the public-school curriculum.

As we examine the mean school-leaving age of pupils over the course of this century to date, and compare this school-leaving age with the relative skill-levels of members of the labor-force at each point in that history, we note a rise of the school-leaving age with advancing standards of competitive employability and potential productivity.

Against retirement ages running between 55 and 65 years in mode, we witness the school-leaving age creeping upward. The shrinking of the ratio of the labor-force employed as productive operatives is compounded by growth of the number of youth and retired persons relative to active members of the labor-force.

The issue is not that of proposing to cheat persons of their retirement rights. On that side, the problem is retrogressive federal and other policies which penalize persons eligible for retirement benefits of their elective right to choose paid or other forms of important activity.

It is the youthful side of the equations that occupy us here. We suffer increasing ratios of secondary-school graduates and leavers who are

unqualified to graduate from the third or fourth grades of properly managed elementary schools. The standards of literacy and other parameters of knowledge and problem-solving abilities are dropping under the impact of "liberal reforms." Most of the pupil's life is being wasted by present educational policies and programs. By returning to "tougher" standards, we will correct part of the problem. By correcting the flaws in the pre-"liberal reforms" curricula, we shall increase the rate of achievement, and effect levels of conceptual achievement at the age of sixteen not now reached during undergraduate college education.

What has been indicated as the importance of early introduction to the classical well-tempered polyphony of Bach and Beethoven applies in analogous ways to education in the classics.

What represented the classics up to the early nineteenth century was by no means the basis for a "culture-appreciation" course. Erasmus, Rabelais, and others created writings for the purpose of educating the relatively ignorant languages of their times. This involved not merely an augmentation of the vocabularies to the level of a civilized language, but, more emphatically, empowered enriched languages with the potential to be an instrument for communication of profound conceptions—for example, "abstract thought."

Nowadays, a "classic" is understood by the miseducated to be anything popular in yesteryear.

The proper distinction of a "classic" is that it (a) represents a work whose style of expression of important conceptions enlarges the power of efficient "abstract thought" by the student, (b) represents a rigorous, significant work in the progress of human knowledge and/or power of communication of conceptions. The essential function of a "classic" is to aid the student to advance his or her power of communicating rigorously formed conceptions of abstract thought.

Science, the classics, rigorous historiography, and competent mastery of the ABCs of political economy: that is the core of a competent educational policy for the future. Cut away the liberal refuse, the "socially significant basketweaving," the "new math," and other poisonous waste. Then, attack the problem of quality of pedagogical method, as the examples of music and geometry are cited to indicate above.

Produce a better people, known to be "better" because the priorities of perspective embodied in their orientation toward the future correspond to the kind of future in which civilization will be able to continue to prosper. Morality? "We the people of the United States . . . to promote the general welfare, and to secure the blessing of liberty to ourselves and our posterity . . . " In that constitutional imperative, the essence of morality is reflected.

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from *Basic Economics for Conservative Democrats*
by Lyndon H. LaRouche, Jr.



LYNDON H. LAROCHE, JR. was born in Rochester, New Hampshire.

After completing military service in the China-Burma-India theater, he left university studies to begin a management consulting career in 1947, which he continued into the 1960s. More recently, he has headed up an international political intelligence news service, respected for its competence in combatting international terrorism.

Since 1974, LaRouche has gained recognition through his influence in sponsoring a new, gold-based monetary system to replace the International Monetary Fund. He is often described as the "intel-

lectual author" of the new world monetary system emerging around the European Monetary System.

As a result of LaRouche's breakthrough in economic science, he has become a leading figure in promoting a revival of the American System of political economy earlier associated with Alexander Hamilton. This breakthrough was achieved by applying Riemannian physics to previously unsolved problems of "mathematical economics."

LaRouche's campaign for the Democratic Party presidential nomination will show that a nonliberal majority can be assembled for a moral presidency, uniting Democrats, Republicans and independents behind a January 1981 return to the American System.



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